Workstation Software

CLIPSTER

Configurations

User Guide

CLIPSTER Configurations User Guide

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User Guide Version 1.1 for CLIPSTER Software Version 1.2

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Headquarters:

DVS Digital Video Systems GmbH
Krepenstr. 8
30165 Hannover
GERMANY

Phone:	+49-511-67807-0
Fax:	+49-511-630070
E-mail:	info@dvs.de
Internet:	http://www.dvs.de

Support:

Phone:	+49-511-67807-25
Fax:	+49-511-67807-31
E-mail:	support@dvs.de

For the Americas:

U.S. Headquarters:

DVS Digital Video, Inc.
300 East Magnolia Boulevard, Suite 102
Burbank, CA 91502
USA

Phone:	+1-818-846-3600
Fax:	+1-818-846-3648
E-mail:	info@dvsus.com
Internet:	http://www.dvsus.com

Support:

E-mail:	support@dvsus.com

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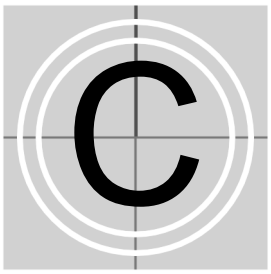

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Introduction

This documentation describes the tools and settings to configure CLIPSTER, the HD real-time editing system manufactured by DVS. CLIPSTER is a powerful high-definition video workstation with enormous flexibility, especially designed to meet the demands of modern post production houses.

CLIPSTER offers capturing, online editing and storing of digital film and audio data in one device. The system performs all works in real time. Video data is stored and worked with in its original uncompressed format, independent of resolution, color space and bit depth. All formats and resolutions can be processed, from SD up to 2K, and the final result can be played out in a freely selectable format. Conversions and calculation times for rendering processes are rarely necessary because of the high-quality hardware developed by DVS. Additionally, up to 16 different channels of audio can be in- or output by CLIPSTER and the data can be accessed and processed in the software as easily as the video material in up to 99 audio tracks. For example, in the software you can set fade-ins and -outs and control the volume at every position of a clip within the timeline independently. All film, video and audio data is stored in the Windows file system and thus accessible right away when working with other applications.

For the configuration and setup of the CLIPSTER video system and the software CLIPSTER provides the CLIPSTER Configuration Tool. Here you can set up, for example, the period for the automatic save function of the project file (auto save) as well as more software specific settings, such as the bin properties. Additionally, various behaviors of the software can be specified, for example, what CLIPSTER should do during a drag-and-drop procedure.

Furthermore, when working with the CLIPSTER software, it is for most tasks necessary to configure and set the video format, for example, to perform either an in- or output of video signals correctly. In addition it may be necessary to alter the properties of clips when using them in the CLIPSTER software.

Because CLIPSTER was designed to be the ultimate solution when working with video and audio in the high-end market, CLIPSTER can

be seamlessly integrated into existing workflows when working with other applications and systems is required. However, to work with particular applications and systems properly CLIPSTER has sometimes to be configured in a certain way.

All these configurations and possible setups will be addressed in this user guide.

1.1 Overview

This user guide informs you about the general handling of the CLIPSTER Configuration Tool as well as about various other configurations either possible or necessary for the CLIPSTER video system.

The chapters in this user guide contain the following information:

Chapter 1	Begins with a short introduction to CLIPSTER and the CLIPSTER configurations, followed by a note regarding the audience this manual is written for and an explanation of the conventions used in this manual.
Chapter 2	This chapter describes the CLIPSTER Configuration Tool. First, an overview of the software module will be given, followed by a description of its individual items.
Chapter 3	Setting the video format is for most works important and necessary, for example, for a record or a play-out operation. Besides descriptions about the basic usage of the window to set the video format, an overview of the window will be given, followed by descriptions of each settings item in detail.
Chapter 4	While adding clips to the bin of the CLIPSTER software some of the clip's properties cannot be detected by CLIPSTER automatically and have to be set manually afterwards. In this chapter the basic usage of the window to set the clip properties will be described, followed by an overview of the window. After this a more detailed description of each settings item will be provided.
Chapter 5	This chapter provides further details and general information for a proper configuration of the CLIPSTER video system when you want to use certain other applications and systems.

Chapter 6	Some of the configuration settings described in this user guide may need further explanations which will be given in this chapter.
Index	This chapter facilitates the search for specific terms.

1.2 Target Group

To use this manual you should have experience in PC handling and be familiar with the handling of digital video equipment.

For the full use of the explained individual configuration settings it is best to have extensive knowledge in the field of digital video and the CLIPSTER software and its functions in general. Furthermore, if you want to use other applications and systems together with CLIPSTER, you should know how to handle them as well.

1.3 Conventions Used in this User Guide

The following typographical conventions will be used in this documentation:

- Texts preceded by this symbol describe activities that you must perform in the order indicated.

– Texts preceded by this symbol are parts of a list.

Texts preceded by this symbol are general notes intended to facilitate work and help avoid errors.

You must pay particular attention to text that follows this symbol to avoid errors.

“ ” Texts enclosed by quotation marks are references to other manuals, guides, chapters, or sections.

’Window’	Window name
Group/Menu	Either a group name, menu name or options in a menu list

Menu » Option	In the specified group or menu select the stated item
BUTTON	Standard text in small caps and bold indicates push buttons
Item	Standard text in bold only stands for other labelled items of the user interface
File	Either a directory structure/file on a storage location or a bin folder structure
Entries	Parameters, selections or entries made in the software
[Key]	An individual key or a key combination on a keyboard

Keyboard Short-cuts

To perform options or procedures with the keyboard often requires simultaneous pressing of two keys.

Example:

[Ctrl + F1]	If this is given, hold down the [Ctrl] key and press simultaneously the [F1] key.

The CLIPSTER Configuration Tool

The CLIPSTER Configuration Tool is one of the basic software modules of the CLIPSTER software. It is used to configure and setup the video system and the CLIPSTER software, for example, the period for the automatic save function of the project file (auto save) as well as more software specific settings, such as the bin properties.

This chapter explains the Configuration Tool of CLIPSTER in detail. After explanations how to start and exit the software module an overview of the user interface will be given. This is followed by a detailed description of the individual settings groups of the CLIPSTER Configuration Tool and the respective items they provide.

For further background and system structure information please refer to the other user guides delivered with CLIPSTER.

2.1 Starting and Exiting the Configuration Tool

This section explains how to start the CLIPSTER Configuration Tool and how to exit it.

2.1.1 Starting the Software Module

This section provides you with a description how to get the CLIPSTER Configuration Tool running. For this you have to start the CLIPSTER software first:

- Select from the **START** button menu of Windows in the submenu ***DVS*** the entry for CLIPSTER (for example, ***All Programs » DVS » DVS Clipster***).
  Alternatively, you may also start the program via a double-click on the CLIPSTER icon available on the desktop of Windows.

This will load the CLIPSTER software by DVS. As the starting user interface, the CLIPSTER Edit Tool will be started automatically and you have to open the Configuration Tool manually:

- Activate the CLIPSTER Configuration Tool with the button **CONFIG…** in the task bar of the user interface (

). Alternatively, you may also use the ***Configuration…*** menu option on the ***Options*** menu which can be accessed via the menu bar of the CLIPSTER software (see “CLIPSTER Edit Tool” user guide for more information about the task and menu bar).

After this the user interface of the CLIPSTER Configuration Tool opens (see section “Overview of the User Interface” on page 2-4).

2.1.2 Exiting the Software Module

To end the current CLIPSTER Configuration Tool session perform the following:

- Use either one of the following possibilities:

button **OK**	This button confirms your alterations to the settings in the CLIPSTER Configuration Tool and closes its user interface. Then the new settings will be in effect for the video system and the other software modules.
button **CANCEL**	The button **CANCEL** closes the user interface of the CLIPSTER Configuration Tool without confirming your settings. The video system and the CLIPSTER software will use the latest confirmed settings.

[Alt + F4]	Same as button **CANCEL**.
	Same as button **CANCEL**.

CLIPSTER stores the configuration settings automatically when the main software is shut down (how to exit the CLIPSTER software is described, for example, in the “CLIPSTER Edit Tool” user guide. Additionally, most of the settings are saved project specific in the project files as well.

The CLIPSTER Configuration Tool will be closed and you return to the main window of the CLIPSTER software.

2.2 Overview of the User Interface

The following figure shows the user interface of the CLIPSTER Configuration Tool as it appears after starting the module (for information on how to start it see section “Starting the Software Module” on page 2-2):

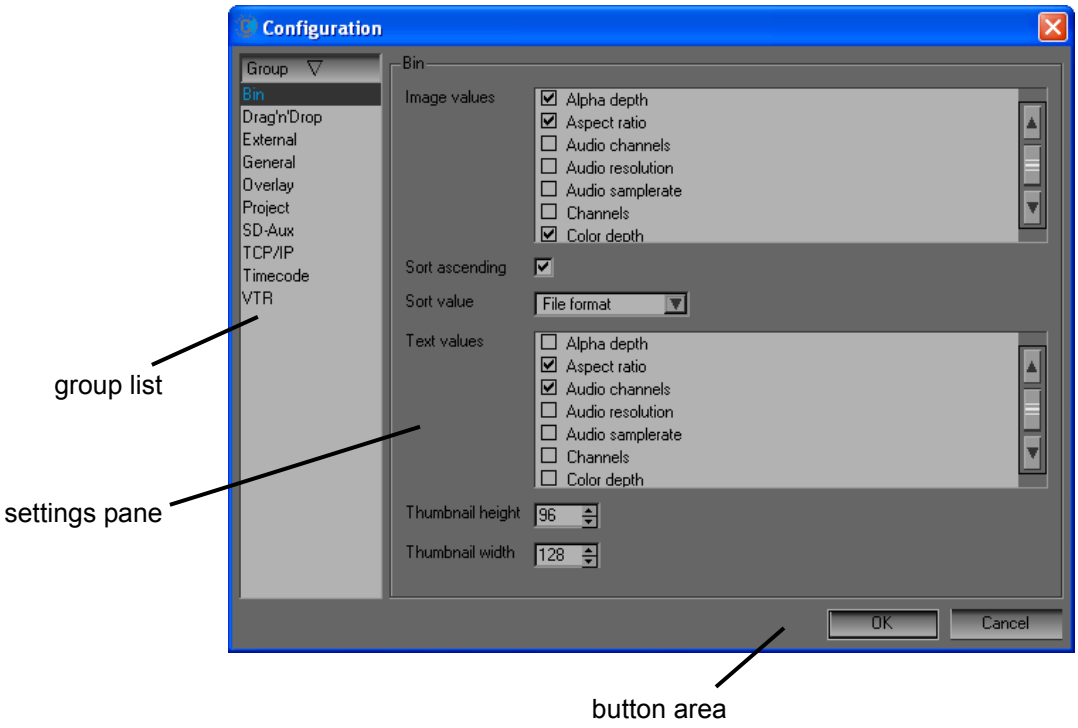


Figure 2-1: The user interface of the Configuration Tool

After starting the CLIPSTER Configuration Tool software module you can find the following items in its user interface:

group list — On the left side of the CLIPSTER Configuration Tool user interface you can find a group list that provides access to the different settings of the CLIPSTER video system. Once an entry in the list is selected, the settings pane to the right will alter its appearance and the configuration items of the respective group are displayed. You can then change the settings under this group.

The items of the group list can be sorted. Simply click

on the heading to sort the entries alphabetically in ascending or descending order. The type of order will be indicated by the arrow to the right of the heading.

settings pane

The settings pane shows the settings of the selected group entry (group list to the left) that are available under this group. To change the settings alter the configurations in the settings pane and confirm your alterations with the **OK** button.

This will close the Configuration Tool. Still, the settings will only be saved when the whole CLIPSTER software is closed. Additionally, most of the settings are saved together with a project file as well.

Furthermore, you have the possibility to export the configuration settings and load them again at a later time (see section “The Configuration Settings” on page 2-6 for further details).

button area

The buttons in the button area are used to confirm or cancel your alterations of the settings. Because they are also used to close the CLIPSTER Configuration Tool, a detailed description of them can be found in section “Exiting the Software Module” on page 2-2.

2.3 The Configuration Settings

In this section you can find detailed descriptions about the individual settings groups of the CLIPSTER Configuration Tool and the respective items they provide.

The configuration settings are mostly concerned with the behavior or the appearance of other software modules included in the CLIPSTER software package, e.g. the CLIPSTER Edit Tool or the CLIPSTER I/O Tool.

For more information about specific items not further explained, please consult the other user guides delivered with CLIPSTER.

The CLIPSTER software saves all configuration settings automatically together with the software when it is shut down. Additionally, most of the settings are saved project specific in the project files as well. However, different tasks may ask for different settings and with the menu option ***Export configuration…*** on the ***Options*** menu of the menu bar in the CLIPSTER software (see “CLIPSTER Edit Tool” user guide) you can save your current software and video system settings into an extra file. They can be loaded easily at any time later again with the menu option ***Import configuration…***. Thus, you can build up a library of various configuration settings and use them for different purposes without configuring the whole system anew.

2.3.1 The Group *Bin*

The group ***Bin*** contains settings regarding the bin of the CLIPSTER software.

The bin is the library and clip management tool of the CLIPSTER software. With it you can sort clips into different folders and preview them via thumbnails. Furthermore, various text information are available for the clips in the bin to provide an overview of selectable clip properties at a glance.

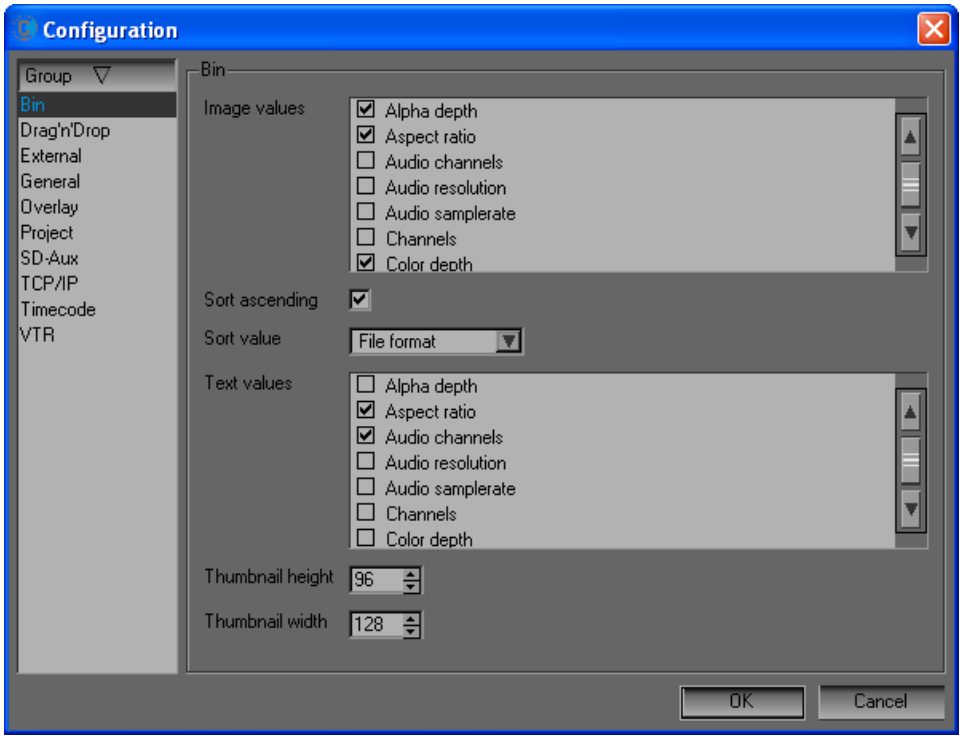


*Figure 2-2: The settings items of the group **Bin***

In detail the group ***Bin*** provides the following settings items:

Image values — In the list box **Image values** select the text information that should be displayed to the right of the clips' thumbnails in the contents area of the bin. The selected text information will be available in the thumbnail view of the bin only.

Sort ascending — When this check box is activated, the clips in the contents area of the bin are sorted by the clips' characteristic set via the combo box **Sort value** in an ascending order. If deactivated, the clips are sorted in a descending order.

Sort value The clips in the contents area of the bin will be sorted by the clips' characteristic set via this combo box.

The clips can also be sorted directly in the bin with in the text information view activated. Click on the respective column heading of the text information table to sort them in ascending or descending order. The sorting will also be available when switching to the thumbnail view of the bin again. Furthermore, the respective settings in the Configuration Tool will be adjusted to the selected sorting automatically.

Text values In the list box **Text values** select the text information that should be displayed when the contents area of the bin is set to the text information view of the clips. The selected text information will be available for the text information view of the bin only, i.e. they will not be displayed when the contents area is in the thumbnail view of the clips.

Thumbnail height

Thumbnail width

These values allows you to adjust the height and width of the thumbnails visible in the thumbnail view of the bin. Either enter the size (in pixel) manually or use the controls to the right of the entry field to step the value up or down until it is set as desired.

Notation: In pixel

2.3.2 The Group *Drag'n'Drop*

The group ***Drag'n'Drop*** deals with all possible drag-and-drop procedures in the CLIPSTER software. For example, when adding clips to the bin with a drag-and-drop procedure from a file manager, the CLIPSTER software is able to create folders in the bin automatically. They will then imitate the directory structure present on the video hard disk array and the video and/or audio clips will already be sorted into the respective folders. This behavior and others can be configured with the ***Drag'n'Drop*** group of the Configuration Tool.

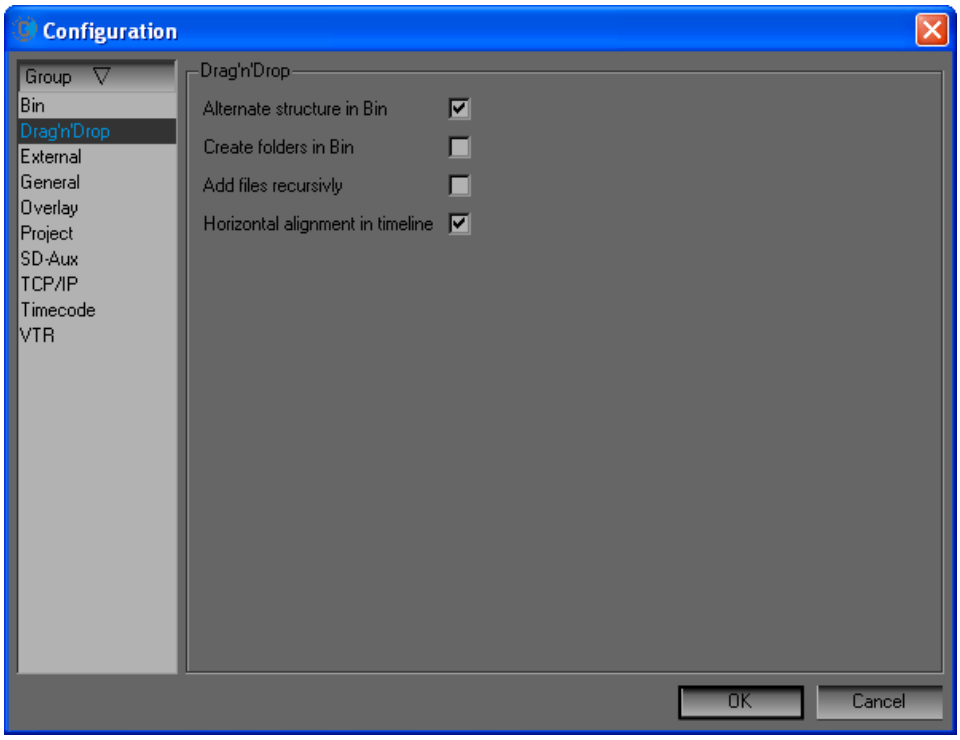


*Figure 2-3: The settings items of the group **Drag'n'Drop***

In detail the group ***Drag'n'Drop*** provides the following settings items:

Alternate structure in Bin If a directory of a file manager is dragged to the contents area or to a folder in the folder area of the bin, this setting will put the clip one bin folder up, i.e. the last (sub)folder will be ignored during the creation of the folders and the clip will be sorted into its previous folder.

Example: The clip *Clipster* (*Clipster_0000.bmp*) in the directory *DVS\Movies\Clipster* will be sorted into the bin folder structure *\DVS\Movies*.

For this feature the check box **Create folders in Bin** has to be activated.

Create folders in Bin

When this item is activated, folders are created automatically in the folder area of the bin during the drag-and-drop procedure of a clip directory to the bin. The created folders will then imitate the directory structure present on the video hard disk array and the video and/or audio clips will already be sorted into the respective folders.

Add files recursively

With this check box activated all subfolders present under the dragged directory will be searched for clips. If it is not enabled, only those clips/folders will be created that contain a clip directly.

This is a general setting for the drag-and-drop procedure and will work always if activated.

Horizontal alignment in timeline

For a drag-and-drop procedure from the bin to the timeline of the CLIPSTER Edit Tool you may select more than one clip (with the [Ctrl] key pressed). Then they can be added to the timeline in one step. The clips will be either aligned horizontally in one track of the timeline or put each into a different timeline track directly below the selected one (for audio clips only). This drag-and-drop behavior can be configured with this setting: If activated, the clips will be arranged horizontally in the respective timeline track. If deactivated, audio clips will be added to a different track each.

2.3.3 The Group *External*

The group ***External*** allows you to specify different applications to process your video data with. They can then be accessed via the ***Export to Application*** menu options available in the CLIPSTER software.

For example, once a clip is dragged from the bin to the control area of the CLIPSTER Edit Tool (master mode of the control area), the set application under the ***Export to Application*** menu option on the menu ***File*** will be available and you can select it to transfer the video data (either a single frame or a complete sequence) to the specified program.

However, to have an application available in the submenu of the ***Export to Application*** menu option you have to define and set it first which can be done with the settings items of the group ***External***.

Further information about the ***Export to Application*** menu options can be found in the “CLIPSTER Edit Tool” user guide.

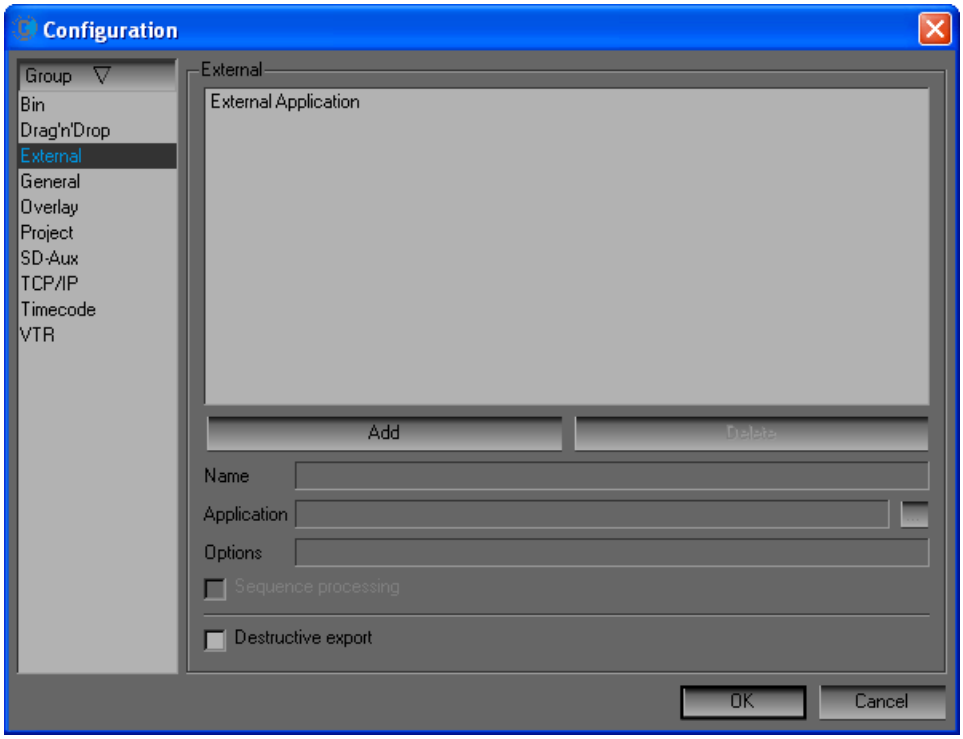


*Figure 2-4: The settings items of the group **External***

In the settings pane of the CLIPSTER Configuration Tool with the group ***External*** selected you can find the following items:

List box	In the list box you can see a list of all already set and specified external applications. Each entry in this box will also be available in the submenu of the ***Export to Application*** menu option. Select from this list box one entry, for instance, to change its settings or to delete it.
ADD	The button **ADD** creates a new application profile with the default name 'New profile'. It will be added to the list box above and the specification items below the buttons become available to set the necessary profile parameters.
DELETE	With the button **DELETE** you can delete an already defined external application from the list box. Simply select an entry from the list box and press this button to delete it.
Name	In the entry field **Name** enter the name of your application profile. This field will be available as soon as an entry is selected from the list box or a new one is added.
Application	In this entry field you have to state the directory path to the external application. You may also click on the button to the right of the entry field ( ) to select an application directly via the opening dialog window. This field will be available as soon as an entry is selected from the list box or a new one is added. Notation: `drive_letter:\directory\subdirectory` Instead of the backslash (`\`) you may also use a slash (`/`). Example: `C:\Program Files\DVS\Clipster\Clipster.exe`
Options	For a defined external application you may have to set appropriate program parameters, for instance, to allow for a processing of a sequence of images. They can be entered in this entry field. Please consult the respective program's user guide for more information about its program parameters. This field will be available as soon as an entry is selected from the list box or a new one is added.

Sequence processing

Enable this check box when you want the complete sequence (each frame between the set in- and outpoint) to be opened in the external application. If it is disabled, only a single frame, i.e. the one selected by the scrub bar or timeline cursor, will be transferred to the application. This field will be available as soon as an entry is selected from the list box or a new one is added.

To use this feature the external application has to support the processing of image sequences.

Destructive export

Enable this check box to process the source material directly in the external application. If you save the data then with the external application, the source material will be overwritten.

When the check box is disabled, the source material will be copied prior to a processing and the copied material is then processed in the external application. It will be copied to the same path and location where the original material is stored with an incrementing number added to the directory name of the clip (*<name of clip's directory><incrementing number>*).

The **Destructive export** check box is valid for all external applications specified with the group ***External***.

When the **Sequence processing** check box is activated, each frame between a set in- and outpoint will be sent to the external application. However, this applies to a single clip only: If, for example, in the timeline the in- and outpoint are set outside of the clip where the menu option ***Export to Application*** was called, only the image sequence of the respective clip where the menu option was called will be sent.

2.3.4 The Group *General*

The items under the group ***General*** are mainly concerned with general settings for the CLIPSTER software. Here you can set, for example, the period for the automatic save function of the project file (auto save).

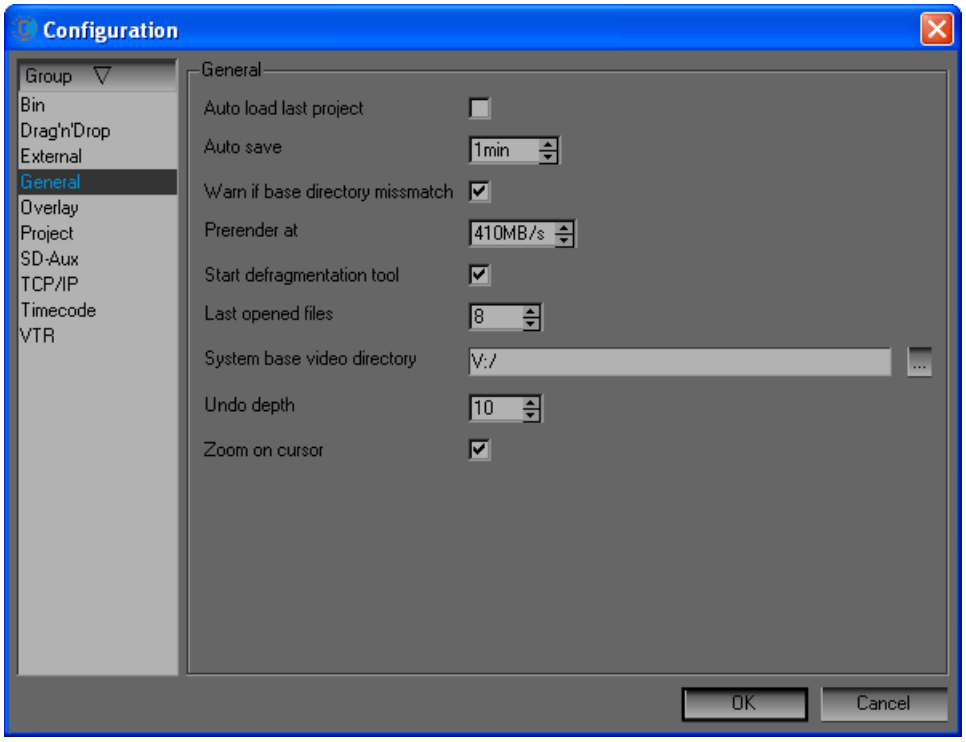


*Figure 2-5: The settings items of the group **General***

In detail the settings pane of the group ***General*** provides the following items:

Auto load last project — If enabled, this setting automatically loads the last project that was opened in the CLIPSTER software once the CLIPSTER software has started.

Auto save

The auto save function automatically saves your project file after certain periods of time for backup purposes. The backup will be saved to an extra file with the file name `<project file name>.cp.autosave`. Every time this backup is performed it will be saved to this file. Then it will contain the last changes to your project currently under work. Use this item to set the time interval for an automatic backup of your work's progress. Either enter the value (in minutes) manually or use the controls to the right of the entry field to step the value up or down until it is set as desired.

A value of zero (`0`) deactivates the auto save function.

When you start a new project file, the auto save function is disabled due to a missing file name for the project. To enable auto save you have to save the project file first and thus assign a name to it.

Notation: In minutes

file extension: *`*.cp.autosave`*

Warn if base directory mismatch

With this item activated you will receive a warning when a clip is added to the bin that is not located within the **System base video directory** (see below). Furthermore, the thumbnail of the respective clip will be colored in yellow to indicate that this clip may not be real-time capable. If it is deactivated, you will receive neither warning nor any indication by the thumbnail of the clip.

Further information about the real-time capability and the warning coloring of clips can be found in the "CLIPSTER Edit Tool" user guide.

Prerender at

Indicates the data rate at which the CLIPSTER Edit Tool will mark a clip for prerendering in the timeline. It will be marked when this value is exceeded. If this setting is set too high, no prerendering will be indicated in the Edit Tool but a play-out may not work properly due to drops (images/frames that could not be read and send in time). If it is set too low, maybe unnecessary prerendering will be indicated by the CLIPSTER software. Either enter the value (in MB/sec.) manually or use the controls to the right of the entry field to step the value up or down until it is set as desired.

This value is a system setting that should not be altered. Only if your video hard disk array is full with data (about 80% full) and you observe drops, it may be indicated to set it to a lower value. In any other case please contact the DVS service department first.

Notation: In megabytes per second

Default value: `410 MB/sec.`

Start defragmentation tool

This setting enables the automatic starting of the defragmentation tool together with the CLIPSTER software. The defragmentation tool is a background process that performs real-time optimized defragmentations on the video hard disk array during stand-still times of the video system, i.e. when no real-time operations are performed. When activated, the defragmentation tool will automatically be started as soon as the CLIPSTER software starts.

Further information about the defragmentation tool can be found in the “CLIPSTER Edit Tool” user guide.

Last opened files

With this item you can set the number of recently loaded project files that should be displayed by the ***Recent files*** menu option on the ***File*** menu (menu bar of CLIPSTER software). They can then be loaded again directly to the CLIPSTER software without searching for them in a dialog window. Either enter the number manually or use the controls to the right of the entry field to step the value up or down until it is set as desired.

System base video directory

Designates the main path to the video directory where the project and clip directory structure begins, usually the path to the real-time capable video hard disk array. It is a system setting (not saved in a project file) and is concerned with the handling of relative or absolute path information stored in a project file, e.g. for video clips. As long as only material from the base video directory is used for a project, it has no direct consequences for your work. Only when deviating from this or when exchanging project files between video systems, the **System base video directory** will be used. Then you may get a warning.

In addition to the following explanations you can find further information about this setting in section “Notes on Directory Paths” on page 6-2.

In case you are using material which is not located on the **System base video directory**, you may get a warning message that the clips may not be real-time capable. You can turn on or off the warning message with the **Warn if base directory mismatch** combo box.

When you are exchanging project files between video systems that are configured to different system base video directories, CLIPSTER will search in his **System base video directory** for the respective clips. As long as the paths following the base video directories are identical on both video systems, there will not be a problem and CLIPSTER is able to find these clips. If this is not the case, you will be notified by a warning message. With this feature you can use client workstations to prepare a project while mastering is performed on a CLIPSTER video system.

Either type in the path in the respective entry field or click on the button to the right (...) to select a path directly via the opening dialog window.

Notation: `drive_letter:\directory\subdirectory`

Instead of the backslash (`\`) you may also use a slash (`/`).

Example: `V:\Video`

Default value: `V:`

Undo depth

This item changes the number of steps that can be undone via the ***Undo*** menu option on the ***Edit*** menu (menu bar of CLIPSTER software). Either enter the number manually or use the controls to the right of the entry field to step the value up or down until it is set as desired.

Zoom on cursor

With this check box you determine whether a zooming in or out of the timeline will be performed on the position of the timeline cursor (timeline cursor is center of the zoom) or on the set viewing position of the timeline (the currently visible center of the timeline will be zoomed to). If activated, a zoom on the timeline cursor will be performed, otherwise a zoom on the viewing position.

2.3.5 The Group *Overlay*

With the video overlay in the control area of the CLIPSTER software you can view the material present in the timeline. All clips and the effects of added operators to timeline elements can be seen immediately. Furthermore, the video overlay of CLIPSTER provides safety areas that can be set to your liking and needs:

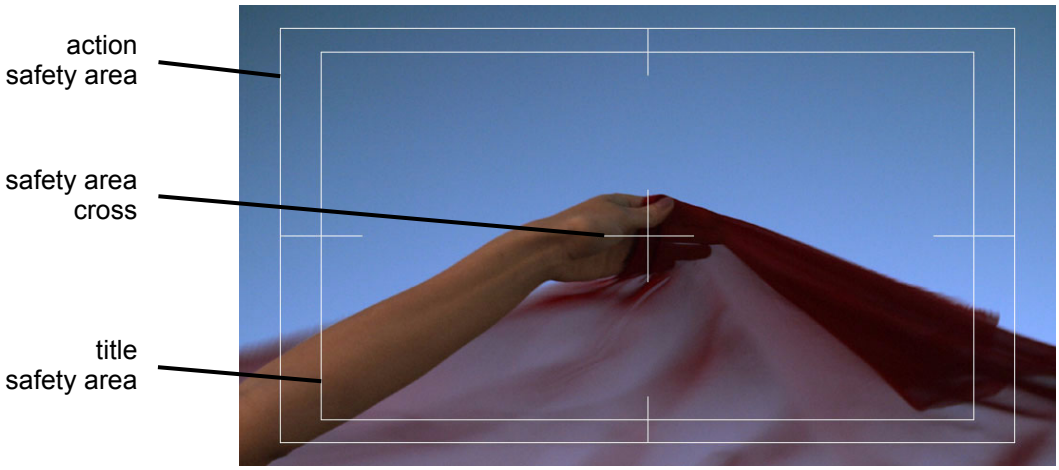


Figure 2-6: Video overlay safety areas

Via the group ***Overlay*** you can set up and configure the appearance of the overlay.

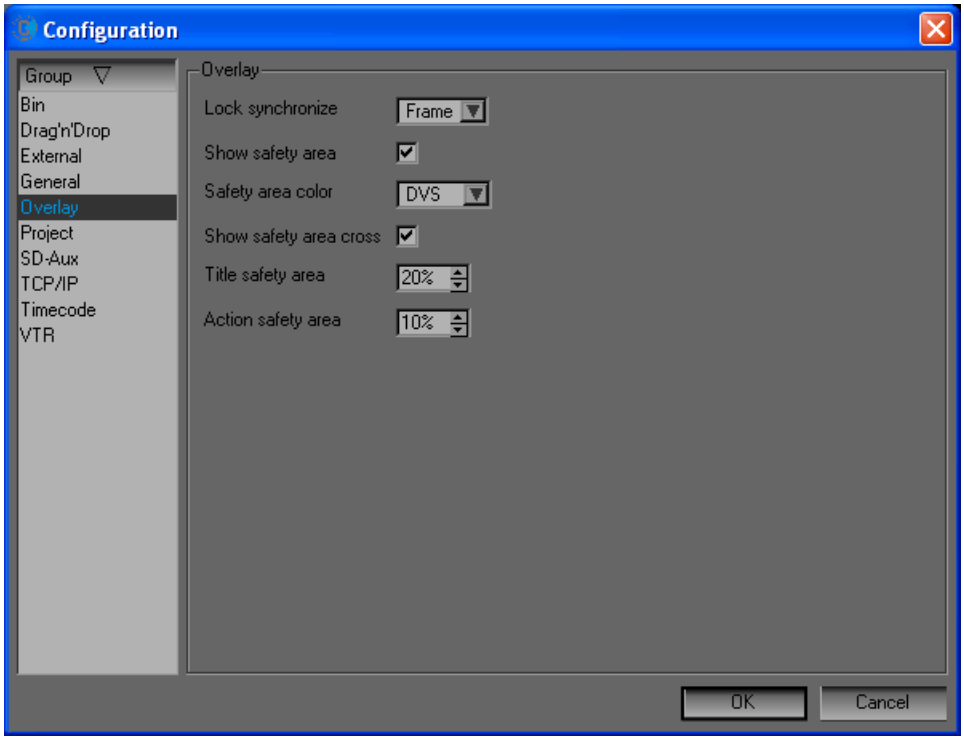


*Figure 2-7: The settings items of the group **Overlay***

In detail the settings pane with the group ***Overlay*** selected will show you the following items:

Lock synchronize For conforming reasons you can lock a clip after dragging it from the contents area of the bin to the control area of the CLIPSTER Edit Tool. With this locking you can synchronize the timeline cursor of the timeline with the scrub bar cursor of the bin clip. The way this synchronization is performed can be set with the combo box **Lock synchronize**:

- `Frame` Performs a synchronization of the frames. This is the recommended setting if both materials consist of the same frame rate.
- `Time` Synchronizes the time. This is the recommended setting if the frame rate differs between the clip from the bin and the material in the timeline.

Show safety areas If the **Show safety areas** check box is activated, the title and the action safety area are visible in the video overlay of the CLIPSTER Edit Tool.

Safety area color CLIPSTER provides several colors for the safety area lines. With this item you can alter the color to your liking or your project's needs.

Show safety area cross If this check box is activated, the safety area cross is visible in the video overlay of the CLIPSTER Edit Tool.

Title safety area This value indicates the distance from the title safety area line to the edge of the video overlay in percent. To change it either enter a new value or use the controls to the right of this field to step the value up or down.

Notation: In percent

Default value: `20%`

Action safety area This value indicates the distance from the action safety area line to the edge of the video overlay in percent. To change it either enter a new value or use the controls to the right of this field to step the value up or down.

Notation: In percent

Default value: `10%`

2.3.6 The Group *Project*

The group ***Project*** contains settings referring directly to the respective project and project file.

The settings under this group are stored together with a project file as well as with the CLIPSTER software when it is shut down.

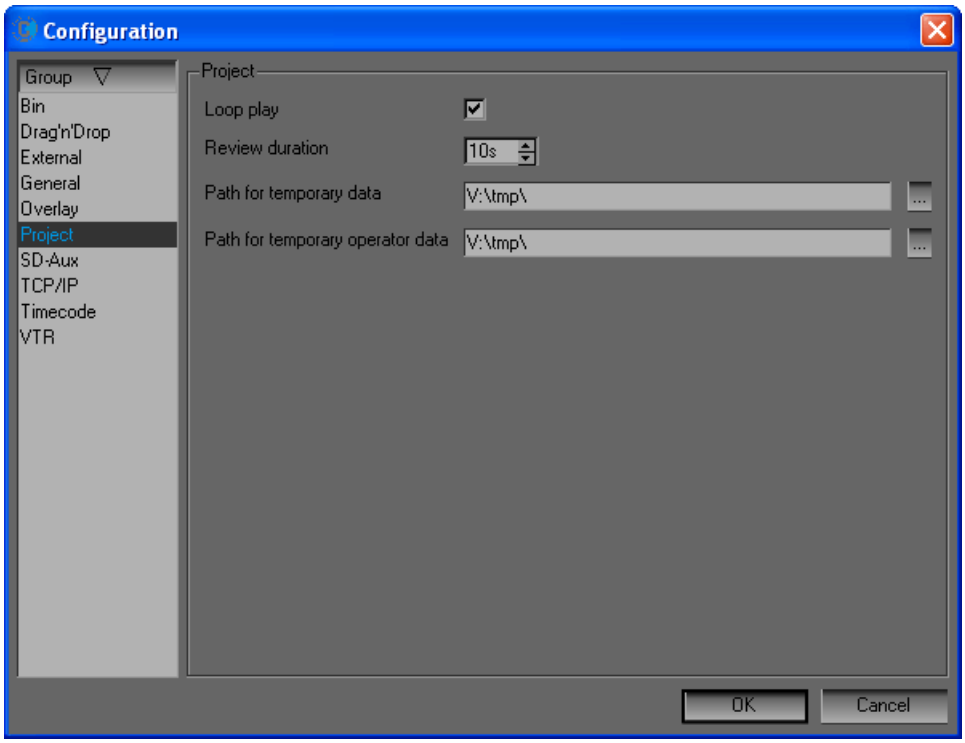


*Figure 2-8: The settings items of the group **Project***

Here the following settings items are located:

Loop play — When activated, the play-out will be performed repeatedly, i.e. once the end of the clips in the timeline is reached, the play-out starts anew from the beginning of the timeline (when the timeline's in- and outpoint are set, it will occur between the in- and outpoint).

Review duration — The CLIPSTER Edit Tool provides a review function that plays around the current position of the timeline cursor in a loop, for example, to evaluate the effect of operators. With this item you can set the total duration that this review should provide. To change it either enter a new value (in seconds) or use the controls to the right of this field to step the value up or down.

Notation: In seconds

Path for temporary data

When a prerendering of timeline elements is needed, the temporary data necessary for these elements, i.e. the prerendered images, will be stored in this location. This setting will be saved project specific in a project file. Therefore, it is possible to save the temporary data in a different path for each project.

The path can be entered either relative, i.e. a path that will be located within the **System base video directory**, or absolute (see section “Notes on Directory Paths” on page 6-2).

Either type in the path in the respective entry field or click on the button to the right (...) to select a path directly via the opening dialog window.

In order to identify the prerendered files easily that belong to one project, it is strongly recommended to use a project based saving of your temporary data, i.e. adjust this path for each project anew if your project depends on prerendered files.

Notation and Example: See section “Notes on Directory Paths” on page 6-2.

Default value: `V:\tmp`

Path for temporary operator data

In this directory path all temporary files that the CLIPSTER program in general needs will be stored. For example, it will be used to store files necessary for CLIPSTER to make certain operators (transitions) real-time capable (transition control files with the extension `*.ctrl`).

This path can be entered either relative, i.e. a path that will be located within the **System base video directory**, or absolute (see section “Notes on Directory Paths” on page 6-2).

Either type in the path in the respective entry field or click on the button to the right (...) to select a path directly via the opening dialog window.

Notation and Example: See section “Notes on Directory Paths” on page 6-2.

Default value: `V:\tmp`

2.3.7 The Group *SD-Aux*

The CLIPSTER video system provides an SD video signal output that sends out the video signal in SD at all times regardless of the setting of the video format. This SD output can be configured with this group of the CLIPSTER Configuration Tool.

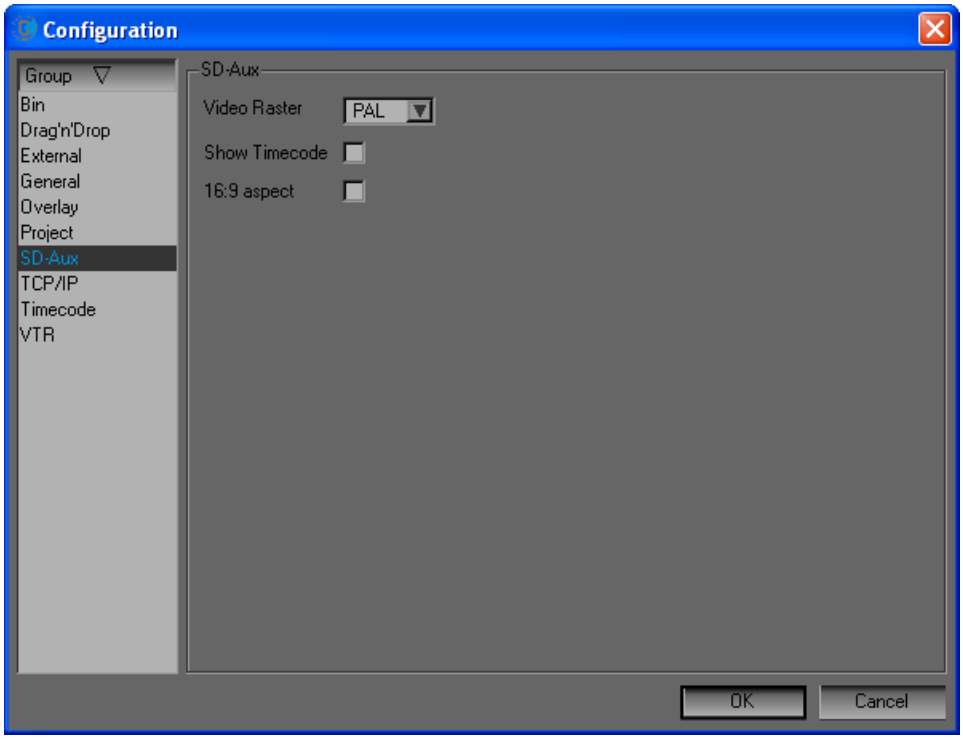


*Figure 2-9: The settings items of the group **SD-Aux***

The settings pane of this group provides the following items:

Video Raster	This combo box switches the SD output between a PAL and NTSC video signal.
Show Timecode	If this check box is activated, the signal will provide additional timecode information superimposed on the original image.
16:9 aspect	If the signal is anamorphic, it can be adjusted by outputting it in a 16:9 aspect ratio. This can be activated with the check box **16:9 aspect**. The signal will then carry an additional coding in its first line which will tell a 16:9 television set to enlarge the pictures.

2.3.8 The Group *TCP/IP*

With the group ***TCP/IP*** you configure the CLIPSTER video system for its usage in a network.

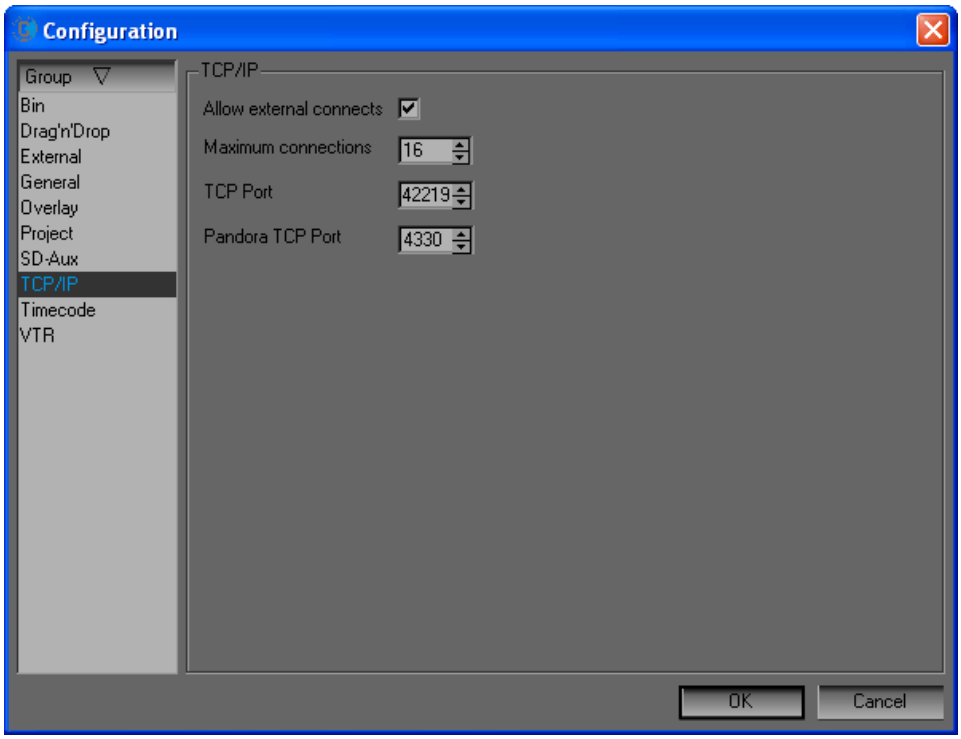


*Figure 2-10: The settings items of the group **TCP/IP***

This group provides the following settings items on the settings pane:

To take changes to the ***TCP/IP*** group in effect, you have to exit and restart the CLIPSTER software.

Allow external connects With this check box you enable the external network connection for CLIPSTER. Then the CLIPSTER software can be connected, for example, from a third-party color grader or other workstations (e.g. via a terminal).

Maximum Connections The **Maximum connections** setting specifies the maximum number of connections (including local connections) that CLIPSTER will allow at a time.

TCP Port

This item specifies the standard TCP port that the CLIPSTER application should use in a network. Then you can connect to the CLIPSTER application and control it via certain commands (see section “Using CLIPSTER in a Network” on page 5-3). This setting should be entered as a 16 bit integer number. Either type in the port manually or use the controls to the right of this field to step the value up or down.

Notation: 16 bit integer number

Default value: `42219`

Pandora TCP Port

The **Pandora TCP Port** resembles the standard **TCP Port** setting. It specifies the port that the CLIPSTER application should use when working together with a Pandora color grader. For this the Pandora system has to be connected to CLIPSTER via a network. Then the color grader will be able to control the CLIPSTER software via this port and send the necessary commands to it to perform a color grading of your timeline material. This setting should be entered as a 16 bit integer number. Either type in the port manually or use the controls to the right of this field to step the value up or down.

Notation: 16 bit integer number

Default value: `4330`

2.3.9 The Group *Timecode*

The ***Timecode*** group provides settings to configure all timecode related features such as switching between timecode and frame notation for the timeline scale and entry fields or defining a special timecode offset.

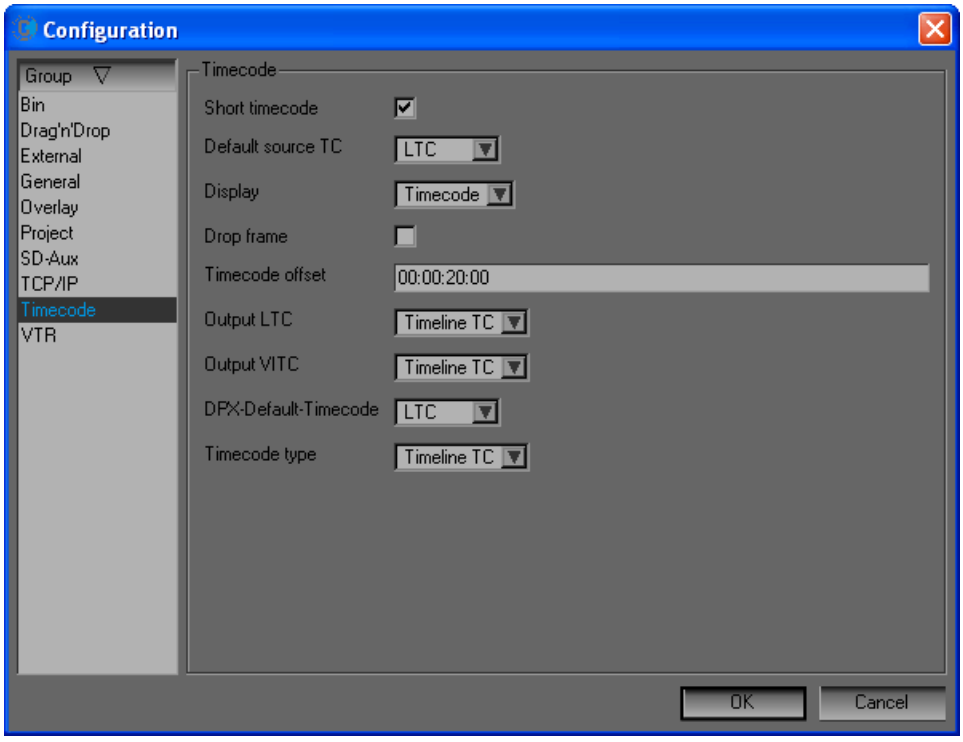


*Figure 2-11: The settings items of the group **Timecode***

On the settings pane of the ***Timecode*** group you can find the following items:

CLIPSTER supports the storage of timecode information within a file's header when allowed by the file format. However, of all file formats supported by the CLIPSTER software, currently only the `*.dpx` file format is checked for and provided with source timecode information.

Short timecode With this check box you can set whether the CLIPSTER Edit Tool should use an abbreviated timecode. If enabled, the software will show wherever appropriate a shorter timecode version only (consisting at least of frames and seconds), i.e. the minutes, hours, etc. will be left out when zero.

Default source TC

Some file formats for clips are capable of storing timecode information. These source timecodes can then be used in the timeline of CLIPSTER. However, when recording clips via the CLIPSTER I/O Tool, the software will write far more timecode information into the file header than usually supported by other applications. When processing these clips with the CLIPSTER software again, you can select between the different timecodes provided by a clip. The source timecode that CLIPSTER should use by default for such a clip when its properties are set to `Global default` (see chapter “Bin Clip Properties” on page 4-1) can be set with the combo box **Default source TC**. Select from it the source timecode that the clips should provide. When the source timecodes in the clips’ properties are set to `Global default`, you can change the settings for all clips present in the CLIPSTER software in one step with the combo box **Default source TC**. It can be changed even after they were added to the timeline.

Currently only the *`*.dpx`* file format is checked for and provided with source timecode information.

`Generic` Uses the source timecode information written to the correct location in the file header that is especially reserved for that kind of meta data, i.e. the standard source timecode that will be provided by the file.

`LTC` Uses the longitudinal time and control code written to a DVS proprietary location within the file’s header.

`DLTC` Uses the digital LTC written to a DVS proprietary location within the file’s header. This data is usually transmitted via ANC.

`VITC` Uses the vertical interval time and control code written to a DVS proprietary location within the file’s header.

DVITC	Uses the digital VITC written to a DVS proprietary location within the file's header. This data is usually transmitted via ANC.
VITC2	Uses the VITC of the odd field that was written to a DVS proprietary location within the file's header. This setting may be useful when processing interlaced material.
DVITC2	Uses the digital VITC of the odd field that was written to a DVS proprietary location within the file's header. This data is usually transmitted via ANC and it may be useful when processing interlaced material.
VTRTC	Uses the timecode that was sent through the remote connection of an external player, such as a VTR. This data is usually transmitted via RS-422 and written to a DVS proprietary location within the file's header.

Display

With this setting you can switch between timecode and frame notation for the CLIPSTER Edit Tool. For example, if Frames is selected, at all appropriate places the frame information is displayed instead of the timecode information.

If as a timecode type Source TC is selected, the frame information viewing for the timeline has no effect on the source timecode displayed by the clips, i.e. you will still see the respective source timecode for the clips.

Drop frame

NTSC material usually leads to a timecode offset after some playing time widely known as the 1000/1001 speed offset because the frame rate is, for example, with NTSC 525i not 30 Hz but 29.97 Hz. To account for this phenomenon some frames are 'dropped' from the timecode at certain intervals. This behavior of the timecode can be activated with this check box.

Timecode offset

If your project needs an offset to match, for instance, with other projects, enter the offset in standard timecode notation here. The timeline of the CLIPSTER Edit Tool, for example, will then provide this timecode offset.

This setting is valid for an output of video data as well as for a record, for example, when CLIPSTER is controlled in slave mode via RS-422.

Furthermore, this setting provides the same function as the **TC - Start** setting of the video format settings window (see section “The Video Format Details” on page 3-9). When adjusting the **Timecode offset** setting, the setting in video format window will be adjusted as well and vice versa.

Notation: `hh:mm:ss:ff`

Example: `01:34:05:22`

Output LTC

Specifies whether the relative timeline timecode or the source timecode provided by the file should be output via the LTC connector. The type of source timecode to be output can be selected freely either via the Configuration Tool of CLIPSTER or the properties of clips in the bin. See also setting **Timecode type** below.

Output VITC

Specifies whether the relative timeline timecode or the source timecode provided by the file should be output together with the video signal. The type of source timecode to be output can be selected freely either via the Configuration Tool of CLIPSTER or the properties of clips in the bin. See also setting **Timecode type** below.

DPX Default Timecode

Some file formats for clips are capable of storing timecode information. These source timecodes can then be used in the timeline of CLIPSTER. However, during a record the CLIPSTER I/O Tool is capable of receiving several different timecode information. With the setting **DPX Default Timecode** you can specify the type of timecode information that should be written to the correct location in the file header that is especially reserved for that kind of meta data, i.e. the timecode information that will be used as the standard source timecode provided by the file. This timecode can then be read by other applications that support source timecode as well.

`LTC`	Uses and writes the longitudinal time and control code as the standard source timecode.
`DLTC`	Uses and writes the digital LTC as the standard source timecode. This data is usually transmitted via ANC.
`VITC`	Uses and writes the vertical interval time and control code as the standard source timecode.
`DVITC`	Uses and writes the digital VITC as the standard source timecode. This data is usually transmitted via ANC.
`VITC2`	Uses and writes the VITC of the odd field as the standard source timecode when processing interlaced material.
`DVITC2`	Uses and writes the digital VITC of the odd field as the standard source timecode when processing interlaced material. This data is usually transmitted via ANC.
`VTRTC`	Uses and writes the timecode provided by the connected external player, such as a VTR, as the standard source timecode. This data is usually transmitted via RS-422.

Timecode type

Some file formats for clips are capable of storing timecode information. These source timecodes can then be used in the timeline of the CLIPSTER Edit Tool. With the **Timecode type** combo box you can select the timecode that should be used for the clips in the timeline.

`Timeline TC` The timecode of the CLIPSTER Edit Tool's timeline is used.

`Source TC` The clips in the timeline use the timecode provided by the header of the file and set either via the Configuration Tool of CLIPSTER or the clips' properties (see chapter "Bin Clip Properties" on page 4-1).

This setting performs the same operation as the timecode type combo box available in the timeline area of the CLIPSTER Edit Tool.

2.3.10 The Group *VTR*

The group ***VTR*** deals with settings related to a video tape recorder (VTR). With CLIPSTER you can control a VTR by remote, for example, as a play-out source while recording with the CLIPSTER I/O Tool. Via the VTR settings you can determine what edit lag and preroll time the CLIPSTER software should observe when controlling a VTR. These parameters will then be used during a RS-422 operation.

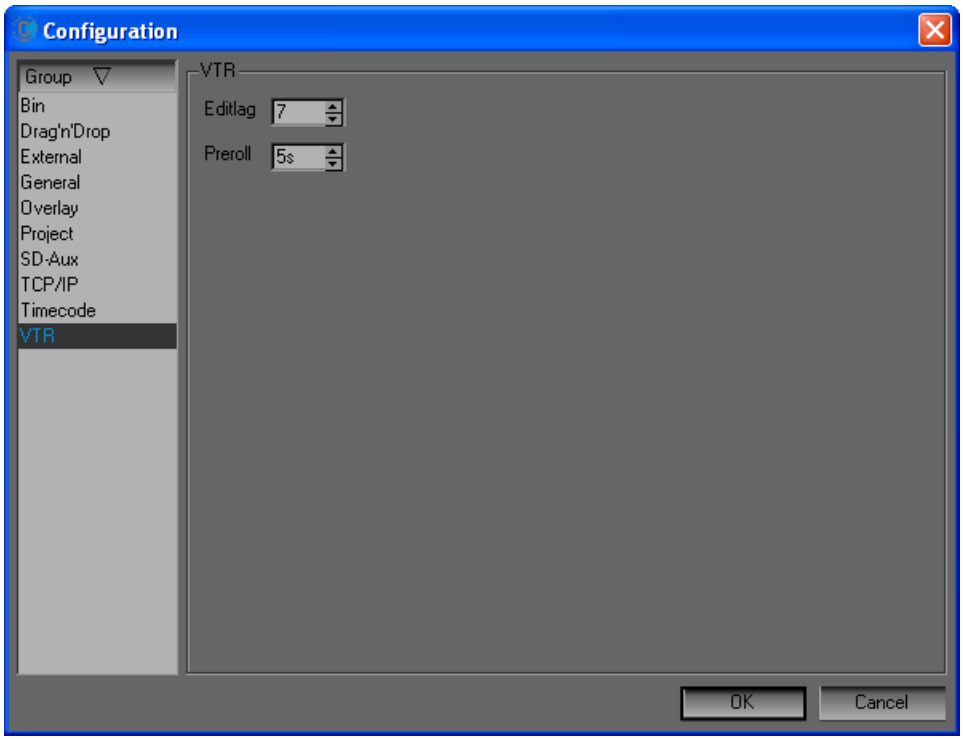


*Figure 2-12: The settings items of the group **VTR***

In detail the group ***VTR*** provides the following settings items:

Further information about the VTR settings can be found in section “VTR Settings” on page 6-10.

Editlag

This value is a characteristic of the connected VTR that can be found in its the technical details. Enter in this field the edit lag of the VTR. To change it either enter a new value (in frames) or use the controls to the right of this field to step the value up or down.

Notation: In frames

Default value: 7

Preroll

With this setting you can adjust the time that the VTR needs to bring the tape to its proper speed (speed 1). It is a characteristic of the VTR that can be found in its technical details. To change it either enter a new value (in seconds) or use the controls to the right of this field to step the value up or down.

Notation: In seconds

Default value: `5s`

Video Format Settings

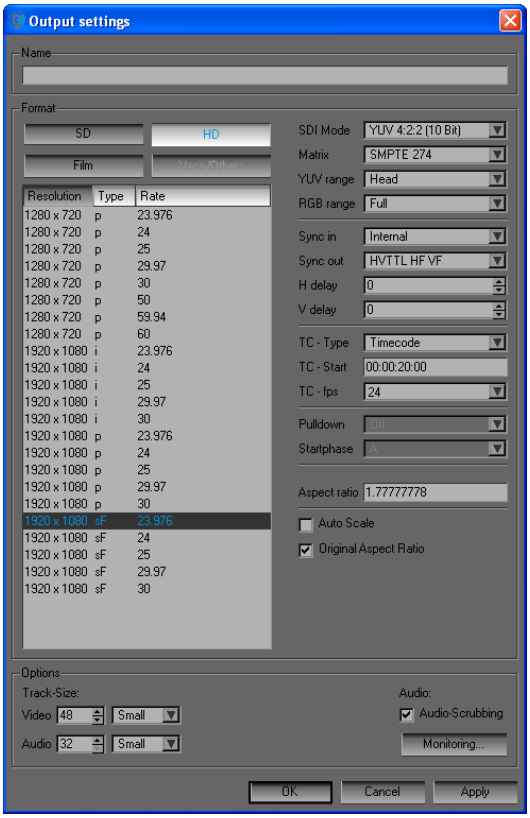
Setting the video format is for most works important and necessary. It is a function included in almost every module of the CLIPSTER software, e.g. in the CLIPSTER Edit Tool or the CLIPSTER I/O Tool. With it you are able to configure and determine the in- or output format (video raster) for a record or a play-out operation.

Once your new settings are confirmed, the in- or outputs of CLIPSTER will change their video format respectively. Additionally, depending on the selected video format the video overlay in the respective CLIPSTER software module may change its aspect ratio. Regardless of the video format settings the SD outputs of CLIPSTER provide at all times a standard definition video signal and can be used to monitor the output of the CLIPSTER software. They can be configured via the Configuration Tool of CLIPSTER (see section “The Group SD-Aux” on page 2-23).

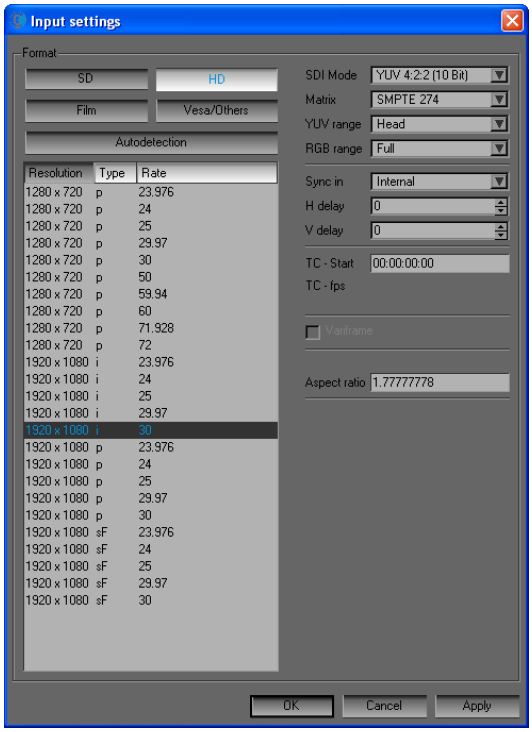
Raster for film not included in the SDI standard (i.e. 2K with 20 Hz or more) can be output via the analog and DVI outputs only, and input via the DVI input.

This chapter explains the individual items of the window to set the video format in detail. Both windows will be described:

– the window that sets the video output format, as well as
– the window that sets the video input format.



output settings window



input settings window

Figure 3-1: Different windows to set a video format

As you can see the window to configure the video format for an input (e.g. as in the CLIPSTER I/O Tool) and the one to configure an output (e.g. as in the CLIPSTER Edit Tool) differ in some respect. However, because the settings items for an input of video signals will mostly be available in the video format window for an output as well, this section focuses on the items of the window as they appear when configuring the output format. Thus the items for an input of video signals will mostly be included.

The items that are exclusively available in the window to configure an input of video signals are explained separately in section “Special Items when Configuring the Input Format” on page 3-17.

3.1 Basics

This section describes some basics regarding the video format settings. After a description how to access them an overview of its window is provided. This is followed by a description how to close and, if applicable, confirm the video format settings.

3.1.1 Accessing the Video Format Settings

The video format settings are available in almost every software module of CLIPSTER. They determine the format for the in- or outputs of CLIPSTER.

However, the different software modules of CLIPSTER, for example, the CLIPSTER Edit Tool or the CLIPSTER I/O Tool also provide different items to access the video format settings. Therefore, for more detailed information on how to access the video format settings in each module please refer to their respective user guides.

3.1.2 Overview

After accessing the video format settings in one of the software modules of CLIPSTER, either the following or a similar window will appear on the screen:

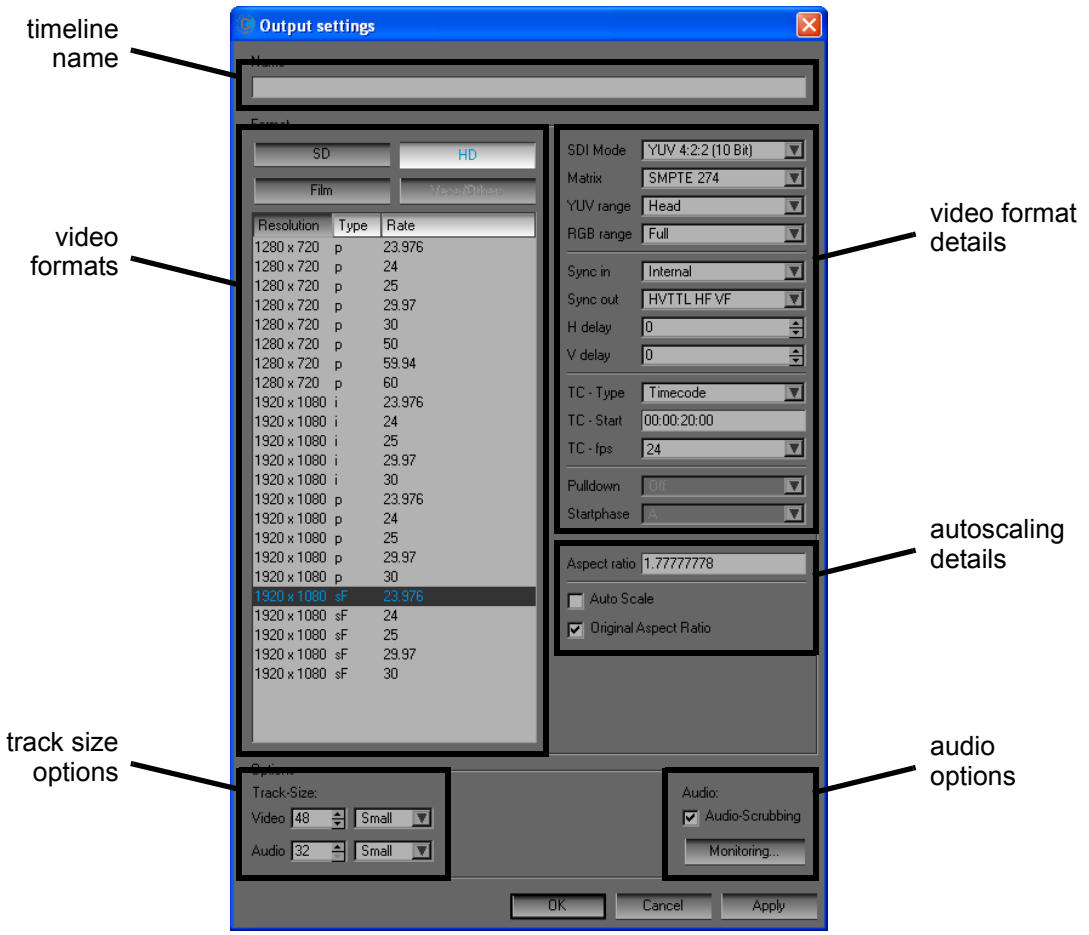


Figure 3-2: Window to set the video format settings

In this window you have to set the video format according to your needs. For example, if you want to view the material in the timeline with an externally connected monitor, you have to configure the output format of CLIPSTER to the setting of the monitor, or, when you want to record video material, the set video format has to match the incoming signal, i.e. it must be configured to the same format and raster as the incoming signal.

In detail the window to set the video format contains the following items:

timeline name	To assign a timeline name to a timeline is necessary when you want to control CLIPSTER via a network (see section “Using CLIPSTER in a Network” on page 5-3).

video formats	On the left side of the video format settings window you can find buttons and a list box to select one of the various video formats that the CLIPSTER video system provides. With the buttons choose one of the video format types that you would like to have displayed in the list box. Then select in the list box the desired video format from the predefined ones.
video format details	With the video format details you can specify your video format selection further. For this the window to set the video format provides several combo boxes and entry fields where you can set, for example, the synchronization or timecode details.
autoscaling details	The autoscaling details allow for a scaling and resizing of the outgoing video signal. These settings are concerned with the original video format of the clips to be played out. The final output of the clips must be seen in relation to the selected video format in the video formats settings area.
track size options	With these settings you can alter the size of the video and audio tracks as they are present in the timeline of the CLIPSTER Edit Tool.
audio options	These items configure the analog audio outputs of CLIPSTER to make a monitoring of audio possible while working with the software.

The individual items of each settings area will be explained in section “The Video Format Settings in Detail” on page 3-7. The items not included in the video format window for an output, i.e. the items that are only available when configuring an input are explained separately in section “Special Items when Configuring the Input Format” on page 3-17.

3.1.3 Closing the Video Format Settings

To close the window to configure the video format settings and thereby to confirm or cancel changes to the settings perform the following:

- Use either one of the following possibilities:

button **OK**	This button confirms your alterations to the settings in the video format window and closes it. Then the new settings will be in effect for the in- or outputs.
button **CANCEL**	The button **CANCEL** closes the video format window without confirming your settings. The video system and the CLIPSTER software will use the latest confirmed settings.
button **APPLY**	This button confirms your alterations to the settings in the video format window without closing it. The new settings will be in effect for the in- or outputs.
[Alt + F4]	Same as button **CANCEL**.
	Same as button **CANCEL**.

CLIPSTER will store the video format settings project specific in the project files.

After using one of the mentioned possibilities the window to configure the video format will be closed.

3.2 The Video Format Settings in Detail

This section describes the window to set the video format in detail. It is structured into the different areas as they were shown and described in section “Overview” on page 3-4.

3.2.1 Timeline Name

The CLIPSTER software is prepared to support multiple video timelines. Then you can assign to each timeline a different name to distinguish between them easily.

Figure 3-3: Timeline name entry field

Additionally, to assign a timeline name is necessary when you want to control CLIPSTER via a network (see section “Using CLIPSTER in a Network” on page 5-3). For certain commands you have to enter a timeline name to execute them successfully. Enter the timeline name in the entry field of the area name as a string.

Notation:	Characters and numbers (string)
Example:	`Timeline_1`

After that close and confirm the video format window to assign the timeline name (see section “Closing the Video Format Settings” on page 3-6). Then you will see the entered name at the top right side of the timeline area in the CLIPSTER Edit Tool:

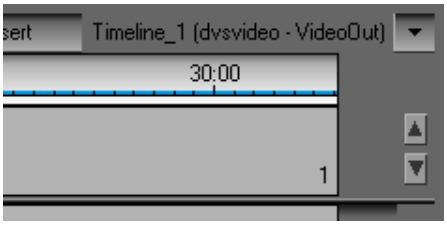


Figure 3-4: Timeline name in CLIPSTER

3.2.2 The Video Formats

On the left side of the video format settings window you can find buttons and a list box to select one of the various video formats that the CLIPSTER video system provides.

Figure 3-5: Selection of a video format

Select with the buttons **SD**, **HD**, **FILM**, and **VESA/OTHERS** the video format type that you would like for your video material as an in- or output format respectively. The various formats of the chosen video format type that CLIPSTER can process will then be displayed in the list box below the buttons. After that select from the list box the desired video format. If appropriate, the video format details to the right will change automatically.

For an input of video signals the incoming signal has to match the video format settings, i.e. it must be of the same format and raster as the signal present at CLIPSTER's input. For this the window for an input of video signals provides the **AUTO-DETECTION** button which allows for an automatic detection of the video format by the CLIPSTER software (see section "Special Items when Configuring the Input Format" on page 3-17).

The items in the list box can be sorted. Simply click on the respective column heading to sort the entries in ascending or descending order. The type of order will be indicated by an arrow to the right of the column heading.

3.2.3 The Video Format Details

To the right of the items to choose a video format you can find the video format details.

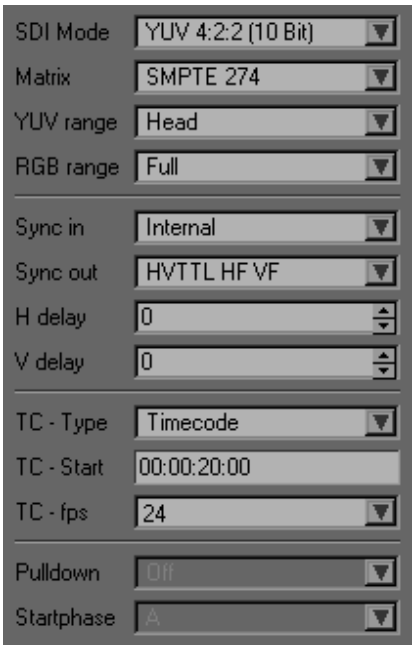


Figure 3-6: Settings for the details of the video format

There you have to state the further in- or output parameters. In detail this area provides the following items:

SDI Mode This setting specifies the serial digital interface mode of the incoming or outgoing signal, i.e. the color space (YUV or RGB), the sampling frequencies (e.g. 4:4:4) and the color bit depth (e.g. 10 bit).

Matrix This setting indicates the color conversion matrix that will be used if a conversion between different color spaces or scalings between different value ranges are necessary. Usually, with SD data the `CCIR 601` and with HD `SMPTE 274` is selected.

YUV range

If you have selected YUV as the SDI mode, this setting has to be applied. It specifies whether the color space range of the data at the in- or output is in a restricted (`Head`) or in a full value range (`Full`).

The color space range of YUV is normally in a restricted value range (with 8 bit data for Y from 16 to 235, and for U as well as V from 16 to 240). A full range, for example, from 0 to 255 (8 bit data), is less common with YUV signals.

RGB range

If you have selected RGB as the SDI mode, this setting will be evaluated. It specifies whether the color space range of the data at the in- or output is in a restricted (`Head`) or in a full value range (`Full`).

In RGB 8 bit with a color space of the restricted value range you will have values ranging from 16 (total black) to 235 (full white), whereas with a full range color space you will have values ranging from 0 (total black) to 255 (full white). Together with RGB the latter color range is mainly used when working on the computer side with editing applications.

More details about the **SDI Mode**, the **Matrix**, the **YUV range** and the **RGB range** settings in general can be found in section “Color Space Conversions and Scalings” on page 6-5.

Sync in

Use this combo box to set the synchronization source for CLIPSTER. Usually, CLIPSTER runs in a non-genlock mode, i.e. an internal synchronization is performed (`Internal`). To set CLIPSTER into an analog genlock mode connect a signal to the sync inputs of CLIPSTER and select an appropriate sync source here (e.g. `Bilevel` or `Trilevel`). If a synchronization should be performed via the signal received on the SDI inputs, select the setting `Digital`.

Sync out

With this combo box you can set the synchronization output of CLIPSTER. You can select between a bilevel, trilevel or TTL synchronization (with, for example, `... HF VR` as 'horizontal falling' and 'vertical rising') on the analog sync outputs of CLIPSTER. Usually, all sync signals will be given out on the horizontal sync output, however, the TTL sync will additionally be output on the vertical sync output. Furthermore, with the `... (on green)` settings you can enable a bilevel or trilevel sync signal on the green channel of the analog output.

H delay

This setting adjusts the horizontal phase of the sync output signal relative to the input sync signal. To change it either enter a new value or use the controls to the right of this field to step the value up or down.

Notation: For video formats sorted under the **SD** button in half-pixel, all other in full pixel

Example: `5`

V delay

This setting adjusts the vertical phase of the sync output signal relative to the input sync signal (in lines). To change it either enter a new value (in lines) or use the controls to the right of this field to step the value up or down.

Notation: In lines

Example: `3`

TC - Type

With this setting you can switch between timecode and frame notation for the CLIPSTER software. For example, if `Frames` is selected, at all appropriate places the frame information is displayed instead of the timecode information.

This setting provides the same function as the **Display** setting in the ***Timecode*** group of the CLIPSTER Configuration Tool (see section "The Group Timecode" on page 2-26). When adjusting the **TC - Type** setting in the output video format window, the setting in the Configuration Tool will be adjusted as well and vice versa.

TC - Start

In the field **TC - Start** you can enter a time-code/frame offset for the incoming or outgoing video signal respectively. If your play-out or record needs an offset to match, for instance, with other projects, enter the offset in standard timecode notation here. Then, for example, the timeline of the CLIPSTER Edit Tool will provide this timecode offset.

This setting is valid for an output of video data as well as for a record, for example, when CLIPSTER is controlled in slave mode via RS-422.

Furthermore, this setting provides the same function as the **Timecode offset** setting in the ***Timecode*** group of the CLIPSTER Configuration Tool (see section “The Group Timecode” on page 2-26). When adjusting the **TC - Start** setting, the setting in the Configuration Tool will be adjusted as well and vice versa.

Notation: `hh:mm:ss:ff`

Example: `01:34:05:22`

TC - fps

This setting is concerned with the timecode signal. Either select a predefined frame rate from the combo box list or enter the frame rate that the timecode should provide directly. With it you can record or play out the timecode signal in another frame rate as set via the originally selected video format. Use it, for example, when you want to record video data which will be sent in a 15 Hz raster but the project should provide, e.g. when played out later via CLIPSTER again, a higher frame rate. The timecodes of the available timelines in the CLIPSTER software will be adjusted to this setting accordingly. When an output of video material is performed, you can sent out, for example, the timecode signal with a lower frame rate with this setting (e.g. 30 Hz), while the video signal is given out in a higher one (e.g. 60 Hz).

Pulldown

Startphase

If appropriate and available, select the necessary pulldown method from the **Pulldown** and **Startphase** combo boxes. Pulldown is needed when working with film-originated material.

For more details about pulldown please refer to section “Pulldown” on page 6-3).

3.2.4 The Autoscaling Details

Directly below the items for the video format details you can find further settings to configure the autoscaling behavior of CLIPSTER.

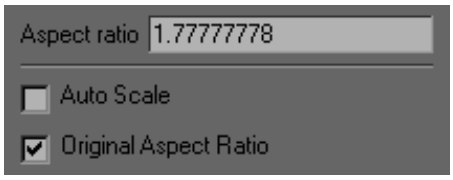


Figure 3-7: Settings for the autoscaling details

Here, you can specify the way CLIPSTER performs scalings if the played out or recorded material does not match the selected video format. In detail this area provides the following items:

Aspect ratio

Via the entry field **Aspect ratio** you can change the aspect ratio of your image content. Thus you can compress or stretch the image as they are present either at the input or on the hard disks of CLIPSTER. The aspect ratio value should be entered as the value of the width (x) divided by the height (y).

Notation: Floating point of `x/y`

Auto Scale

This setting allows for a scaling and resizing of your original material. The original data on the hard disks of CLIPSTER must be seen in relation to the selected video format. Then, if the video material is greater than the selected video format, the images will get cropped (e.g. with video material in HD when a SD video format is selected), or, if it is smaller, you will get 'letterboxes', i.e. black borders around the images (e.g if the video material is in SD and as a video format a HD raster is selected).

With the check box **Auto Scale** activated, the original material will be scaled up or down to its maximum allowable width and/or height according to the selected video format. With this setting you can make sure that no information gets lost, i.e. the images will not be cropped nor will they be to small for the selected video format with this function. If you leave the **Auto Scale** check box unticked, the material will maintain its original size. An example of the result of this setting can be found in figure 3-8 on page 3-14

Original Aspect Ratio

Via the check box **Original Aspect Ratio** the aspect ratio (the relation of width (x) and height (y) of the video format) can be preserved. Thus, the images will not get stretched nor compressed. An example of the result of this setting can be found in the figure below.

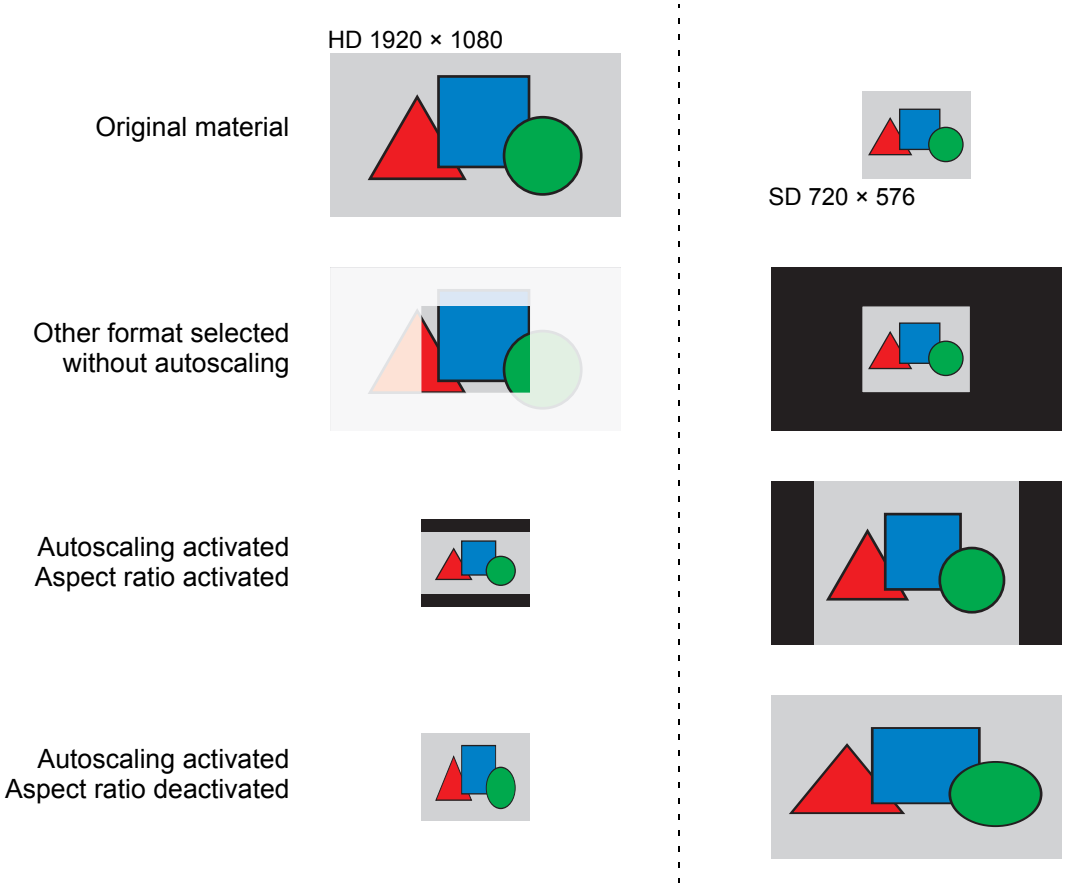


Figure 3-8: The results of autoscaling and original aspect ratio

In the CLIPSTER Edit Tool detailed autoscaling information about the width and height applied to a clip in the timeline as well as the respective aspect ratio can be seen in the clip properties of the clip in the timeline. The operator 'Zoom + Pan' will show you the original settings of the clip as well as autoscaling information that CLIPSTER has applied to the clip.

Furthermore, if the video material is too small or too great for the selected raster, you may use this timeline operator to receive acceptable play-out results.

3.2.5 Track Size Options

At the bottom of the video format window for the output configuration you can find further optional settings. To the left you can find settings

to alter the size of the video and audio tracks in the CLIPSTER Edit Tool.

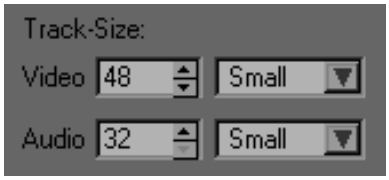


Figure 3-9: Track size options

With the fields for the track sizes you can adjust the height of the tracks for video and audio separately to adapt them to your personal needs for a more comfortable working.

Video — The entry field and the combo box of the item **Video** alter the height of the timeline's video track. To change it two possibilities exist: Either alter the size in the entry field manually by typing in the pixel height or select one of the preset sizes from the combo box to the right (`Small`, `Medium`, `Large`).

Audio — The entry field and the combo box of the item **Audio** alter the height of the timeline's audio tracks. To change them two possibilities exist: Either alter the size in the entry field manually by typing in the pixel height or select one of the preset sizes from the combo box to the right (`Small`, `Medium`, `Large`).

3.2.6 Audio Options

At the bottom of the video format window for the output configuration you can find further optional settings. To the right you can find settings to configure the analog audio outputs of CLIPSTER to allow for a monitoring of audio during your work with the software.

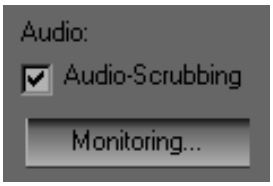


Figure 3-10: Audio options

At the rear of the CLIPSTER hardware you can find analog audio outputs where you can then monitor the audio output. In detail this area provides the following items:

Audio Scrubbing — If this setting is activated, during a scrubbing of the CLIPSTER Edit Tool's timeline, for example, with a fast shuttle operation with the mouse, the contents of the audio tracks will still be given out. Then the audio signal resembles and imitates a fast shuttle operation of a VTR. For this the analog audio signal has to be configured appropriately via the button **MONITORING…**.

MONITORING… — The button **MONITORING…** configures the analog audio outputs of CLIPSTER. A click on this button opens the following window:

Figure 3-11: Analog audio configuration

The settings **Output A** and **Output B** configure the first and second analog monitoring output of the CLIPSTER hardware respectively. Select from the combo boxes the audio channels that should be given out at the respective analog output.

If you want to play out other audio channels than channel 1 and 2 on the analog audio outputs, the audio outputs of the audio tracks of the CLIPSTER Edit Tool have to be configured appropriately. Further information about this can be found in the "CLIPSTER Edit Tool" user guide.

3.2.7 Special Items when Configuring the Input Format

The items not included in the video format window for an output, i.e. the items that are only available when configuring an input are explained in this section. The following items are only available when configuring the input video format:

The **AUTODETECTION** button directly beneath the buttons to select the video format type enables you to detect the video format automatically. For this a standard video signal has to be connected to CLIPSTER's input connectors. When this button is pressed, CLIPSTER tries to detect the video format and sets all items appropriately.

If your selected raster complies with the standard SMPTE 296 and a frame rate of 50 Hz or greater, for example, 1280 × 720 p at 60 Hz, the Variframe check box will become available. Some digital cameras send their video data in these video formats. However, to be immediately in a proper frame rate for such a device as CLIPSTER you can set up at the camera the frames that the device has to capture. Then during a capturing with such a camera and the CLIPSTER I/O Tool, for example, these frames will be tagged by the camera and when the Variframe check box is enabled, only those will be recorded by CLIPSTER. This way you can reduce the 50 or more images send by the camera per second to a standard and easy to handle 24 frames per second.

Bin Clip Properties

The bin of the CLIPSTER software provides the very first access to the video and audio material on the hard disk array. It can be used for a clip and project management and normally contains all video and/or audio clips that you intend to use in your project.

Further information about the usage and features of the bin can be found in the “CLIPSTER Edit Tool” user guide.

When adding clips to the bin via a record, the CLIPSTER software automatically sets all properties correctly.

Each video and audio clip present in the bin (bin clip) provides clip properties that can be altered according to the characteristics of the material available on the video hard disk array. When clips are added to the bin at a later time, for example, via a drag-and-drop procedure or via the menu option ***Add Clip***, some characteristics of video material cannot be discerned by the software automatically, for example, whether the material is in progressive or interlaced format. Such information have to be altered manually via the properties of the clip present in the bin. The altered clip properties will then be used for this clip in the entire CLIPSTER software even if it was already added to the timeline.

4.1 Basics

This section describes some basics regarding the clip properties of a video or audio clip in the bin. After a description how to access the properties an overview of its window is provided. This is followed by a description how to close and, if applicable, confirm the properties of a bin clip.

4.1.1 Accessing the Clip Properties

You can call up the properties of a video or audio clip in the bin via its context menu:

For this an audio or video clip has to be present in the contents area of the bin. To receive a clip in the bin you have to either record it via the CLIPSTER I/O Tool, add it via the menu option ***Add Clip*** of the contents area's context menu, or perform a drag-and-drop procedure of a clip from a file manager such as the Windows Explorer. Further information about these procedures or the context menu of the contents area can be found in the respective user guides of CLIPSTER.

- In the contents area of the bin invoke the context menu on the clip whose properties you would like to change.
- On the context menu select the menu option ***Properties***.

Contrary to video the properties of audio multi-clips cannot be changed. Usually, when an audio multi-clip is added to the contents area of the bin, a subfolder will be created automatically which will then contain the individual audio clips as they are present on the hard disk array. If you want to change the properties of an audio multi-clip, you have to alter the properties of each clip in the provided subfolder individually. Further information about the multi-clips can be found in the "CLIPSTER Edit Tool" user guide.

After this the clip properties window opens (see section "Overview" on page 4-3) and you can now change its properties accordingly.

4.1.2 Overview

After accessing the properties of a clip in the bin via its context menu (see section “Accessing the Clip Properties” on page 4-2), you will see either the following or a similar window on the screen:

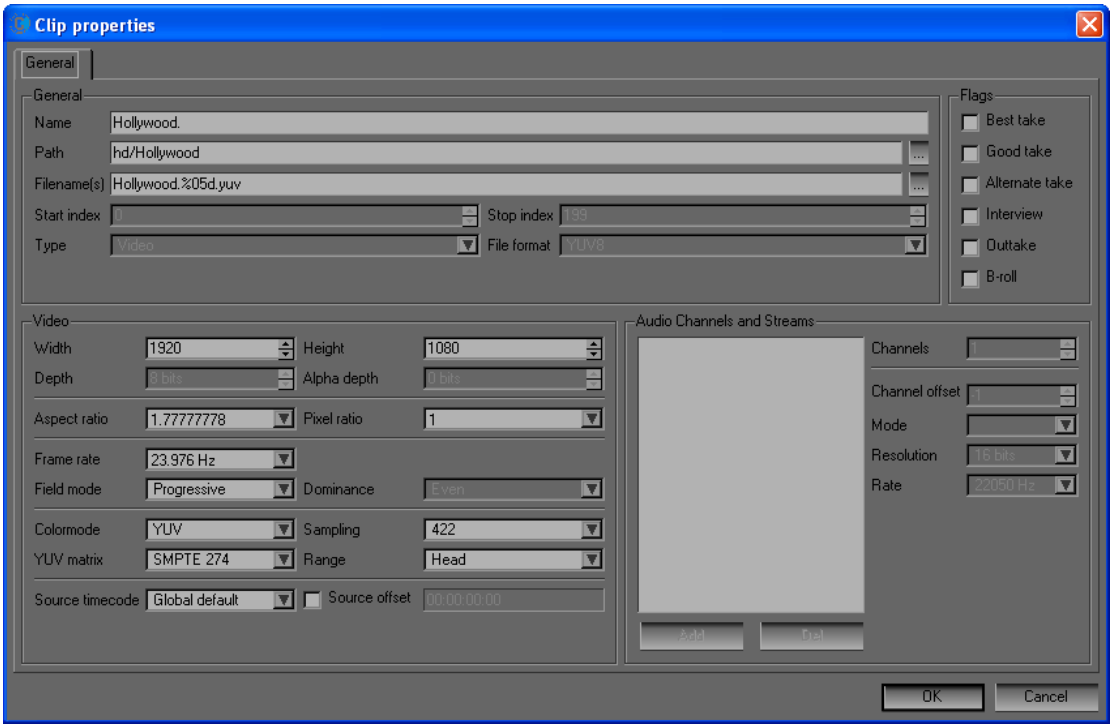


Figure 4-1: Window of bin clip properties

In this window you can alter the properties of the video or audio clip. If the clip was already added to the timeline (perhaps even more than once), the clip’s behavior can be changed via the bin clip properties instantly, i.e. the changes will be applied to the clip in the bin and its representations in the timeline as well. In detail this window contains the following items:

Some of the clip properties can only be altered if the clip is not already present in the timeline.

Because CLIPSTER only uses representations of the original material on the hard disk array, regardless of the settings performed here, your original material will not be affected.

general clip properties — In the settings area **General** you can change the more general parameters of the clip, such as its name, file name or directory path.

flags — With the **Flags** area you can assign specific flags to a clip that may help you during your clip and project management.

video settings	If the clip is a video clip, you can change the video related settings of the clip's representation in CLIPSTER in the area **Video**, such as its aspect ratio or field mode.
audio settings	If the bin clip is an audio clip, you can change its audio related settings in the area **Audio Channels and Streams**.

The individual items of each settings area will be explained in section "The Bin Clip Properties in Detail" on page 4-5.

4.1.3 Closing the Clip Properties

To close the window of the clip properties and thereby to confirm or cancel changes to the settings perform the following:

- Use either one of the following possibilities:

button **OK**	This button confirms your alterations to the settings in the clip properties window and closes it. Then the new settings will be in effect for the respective clip.
button **CANCEL**	The button **CANCEL** closes the clip properties window without confirming your settings. The CLIPSTER software will use the latest confirmed settings.
[Alt + F4]	Same as button **CANCEL**.
	Same as button **CANCEL**.

CLIPSTER will store the properties set via the clip properties window project specific in the project files.

After using one of the mentioned possibilities the window to configure the clip properties will be closed.

4.2 The Bin Clip Properties in Detail

This section describes the window to set the properties of a clip in the bin in detail. It is structured into the different areas as they were shown and described in section “Overview” on page 4-3. Once the settings are complete, you can confirm them as described in section “Closing the Clip Properties” on page 4-4. They will then be in effect for this clip and its representations in the entire CLIPSTER software.

4.2.1 The General Clip Properties

The area **General** provides more general characteristics and parameters of the clip, such as its name, file name or directory path.

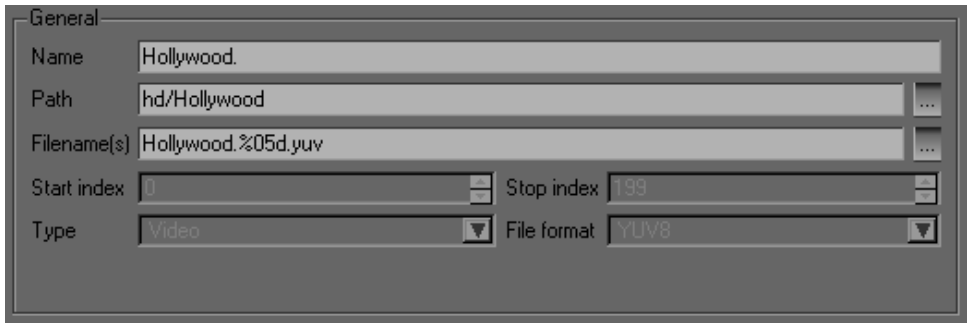


Figure 4-2: General properties of a clip

In detail this area provides the following settings:

Name

This entry field states the name of the clip as it will occur, for example, in the clip’s representation in the timeline. Usually, it is the file name of the video files without the frame counter and the file extension. You can change it to any name you want.

Notation: Characters and numbers (string)

Example: `Hollywood_01`

Due to some limitations of the internal notation, the following characters in a clip name will be replaced automatically: `,` by `.`, `"` by `'`, `<` by `(`, and `>` by `)`.

Path

This setting indicates the directory path to the video or audio material on the video hard disk array. It can be entered either relative, i.e. as a path that will be located within the **System base video directory** (see section “The Group General” on page 2-14), or absolute.

Either type in the path in the respective entry field or click on the button to the right ( ) to select a path directly via the opening dialog window.

Notation and Example: See section “Notes on Directory Paths” on page 6-2.

Changing this setting may lead to an invalid clip.

Filename(s)

This setting indicates the file name(s) of the video or audio material. Either type in the file name in the entry field or click on the button to the right ( ) to select a file directly via the opening dialog window.

While audio files are shown with their exact file name, video file names are entered in C notation, usually with the following syntax:

`<string>%0Yd.<ext>`

`<string>`	Preceding string of file name
`%`	Marker that the following is a format string
`0`	If the output of the format string does not provide the stated length, fill it with zeros (`0`)
`Y`	Number of digits, for example, `5`
`d`	Marker that the format string is a decimal number
`<ext>`	File extension
Example:	`Hollywood%05d.dpx`

	With this setting the file names on the hard disk array should be:
	`Hollywood00001.dpx`
	`Hollywood00002.dpx`
	`Hollywood00003.dpx`
	etc.

Changing this setting may lead to an invalid clip.

Start index Shows the start index of the clip, i.e. the first frame number that is available (indicated by the file name; with audio files usually zero (0)).

This setting will be determined by CLIPSTER automatically and cannot be altered.

Stop index Shows the stop index of the clip, i.e. either the last frame number that is available (indicated by the file name) or the last audio sample (determined by the length of the audio clip).

This setting will be determined by CLIPSTER automatically and cannot be altered.

Type This setting shows whether the clip is recognized as video or audio.

This setting will be determined by CLIPSTER automatically and cannot be altered.

File format Shows the file format of the clip.

This setting will be determined by CLIPSTER automatically and cannot be altered.

4.2.2 The Flags

With the items of the **Flags** area you can assign specific flags to a clip that may help you during your clip and project management.

Figure 4-3: Flags for a clip

Simply activate the appropriate check box(es) and confirm your settings with the **OK** button to assign the flag(s) to the respective clip.

In the bin you can then, for instance, sort the clips by flags to identify the tagged ones easily and perform further administrative work with them.

4.2.3 The Video Settings

If the properties you are working on belong to a video clip, the items in the area **Video** will be available. With them you can change the video related settings of the clip's representation in CLIPSTER, such as its aspect ratio or field mode.

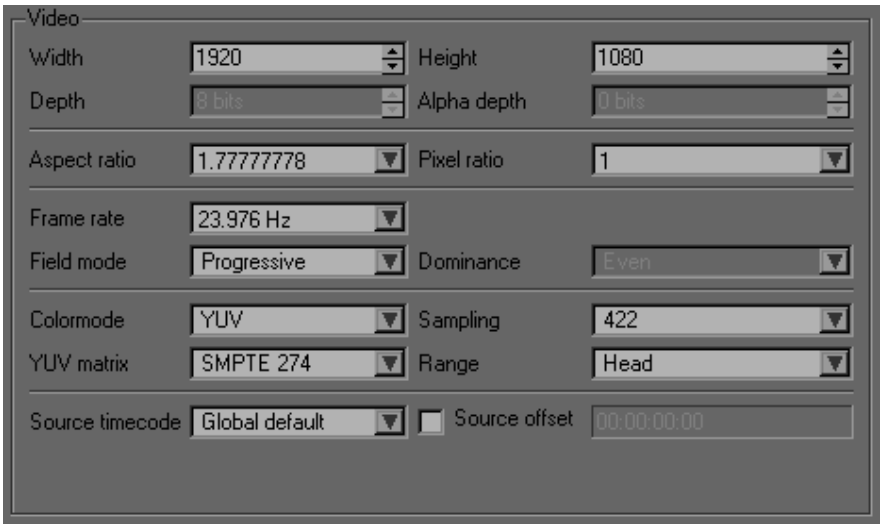


Figure 4-4: Video related settings for a clip

In detail this area provides the following settings:

Width This entry field states the width of the video images (x-axis) in pixel.

Notation: In pixel

Example: `2048`

Height This entry field states the height of the video images (y-axis) in pixel.

Notation: In pixel

Example: `1556`

Depth This setting shows the color bit depth of the video clip. CLIPSTER supports clips with a bit depth of up to 16 bit.

This setting will be determined by CLIPSTER automatically and cannot be altered.

Alpha depth

If your clip provides an alpha (key) channel, its bit depth will be displayed here (no alpha channel equals `0 bit`)

This setting will be determined by CLIPSTER automatically and cannot be altered.

Aspect ratio

Pixel ratio

The settings **Aspect ratio** and **Pixel ratio** are related to each other. Use either one of these settings to change the ratio of the clip, for example, to restore anamorphic captured material. You may type in in the entry fields a value manually or select one of the preset values via the combo boxes. The ratio values should be entered as the value of the width (x) divided by the height (y).

Notation: Floating point of `x/y`

Example: `0.749999998`

Frame rate

Change the frame rate of the video clip, for example, if its original frame rate differs from the set one. Either type in in the entry field a value manually or select one of the preset values via the combo box.

Field mode

By default CLIPSTER sets the video format of each clip added to the bin to the progressive field mode. Only when a clip was recorded with CLIPSTER and thereby added to the bin, it will show the interlaced field mode correctly. If your material is in an interlaced video format and added to the bin at a later time, you have to change the field mode respectively.

Dominance

Select the dominance for your interlaced material from the combo box **Dominance**. The `Odd` value starts the clip with the second video field of the interlaced image while the value `Even` begins with the first video field.

Color mode

With this setting you can alter the color mode of the clip if the set value does not match the material on the hard disk array.

Sampling

This setting indicates the sampling frequency (e.g. 4:4:4) of the clip. It should match the material on the hard disk array.

YUV matrix

This setting indicates the color conversion matrix that will be used if a conversion between different color spaces or scalings between different value ranges are necessary for the clip. Usually, with SD data the `ITU-R BT.601-5` and with HD `SMPTE 274` is selected.

Range

This setting specifies whether the color space of the data on the hard disk array is in a restricted (`Head`) or in a full value range (`Full`).

The color space of YUV is normally in a restricted value range (with 8 bit data for Y ranging from 16 to 235, and for U as well as V from 16 to 240). A full range, for example, from 0 to 255 (8 bit data), is less common with YUV signals.

In RGB 8 bit with a color space of the restricted value range you will have values ranging from 16 (total black) to 235 (full white), whereas with a full range color space you will have values ranging from 0 (total black) to 255 (full white). Together with RGB the latter color range is mainly used when working with the data on the computer side with editing applications.

More details about the **Color mode**, the **YUV matrix** and the **Range** settings in general can be found in section “Color Space Conversions and Scalings” on page 6-5.

Source timecode

Some file formats for clips are capable of storing timecode information. These source timecodes can then be used in the timeline of CLIPSTER. However, when recording clips via the CLIPSTER I/O Tool, the software will write far more timecode information into the file header than usually supported by other applications. When processing these clips with the CLIPSTER software again, you can select between the different timecodes provided by a clip.

This setting determines the source timecode information the respective clip will use when added to the timeline.

Currently only the `*.dpx` file format is checked for and provided with source timecode information.

`Global default` This is the recommended setting for the clip's source timecode. Then all clips with this setting will use the source timecode information that is set via the CLIPSTER Configuration Tool (see **Default source TC** in section "The Group Timecode" on page 2-26).

For a description of the other possible settings please refer to the description of the setting **Default source TC** in section "The Group Timecode" on page 2-26.

Source offset

If a clip needs an offset for the source timecode to match, for instance, with other clips already added to the timeline, you have the possibility at hand to define an offset for each clip individually with this setting. The clip in the timeline of the CLIPSTER Edit Tool will then provide this timecode offset.

For this activate the check box to the right of the setting **Source timecode** to enable the **Source offset** configuration. Then you can enter in the entry field to the right the timecode offset in standard timecode notation that the clip should provide when added to the timeline.

This offset is only available when as a timecode type `Source TC` is selected (see section "The Group Timecode" on page 2-26.)

Notation: `hh:mm:ss:ff`

Example: `01:34:05:22`

4.2.4 The Audio Settings

If the properties you are working on belong to an audio clip, the items in the area **Audio Channels and Streams** will be available. With them you can change the audio related settings of the clip.

Changes to the audio settings can only be performed if the clip is not already present in the timeline.

Additionally, the properties of audio multi-clips cannot be changed. Usually, when an audio multi-clip is added to the contents area of the bin, a subfolder will be created automatically which will then contain the individual audio clips as they are present on the hard disk array. If you want to change the properties of an audio multi-clip, you have to alter the properties of each clip in the provided subfolder individually. Further information about the multi-clips can be found in the “CLIPSTER Edit Tool” user guide.

Figure 4-5: Audio related settings for a clip

CLIPSTER supports audio clips that contain more than one mono or stereo channel (multiple channels) in the audio file. Such a clip may contain up to 16 streams of audio. With the clip properties of an audio clip in the bin you are able to control these streams as well as set other parameters of the clip: By clicking on the channels in the list box you can view and alter their properties with the controls to the right.

In detail the area **Audio Channels and Streams** provides the following settings:

When performing a record via the CLIPSTER software, you can influence the stream settings described in the following via the **+** button of the audio channel settings.

list box of audio streams

This box lists the streams (channels) together with their audio mode (stereo/mono) that the clip provides. It may contain up to 16 streams for each channel that CLIPSTER can handle. If a stream is in stereo, it will show two channels for the stream. If it is in mono, only one channel will be displayed for the stream.

With the buttons below the list box and the controls to the right you can delete existing streams, add them anew or change the configuration of each stream individually.

stereo: `Stream X: <chan.> y - <chan.> z`

mono: `Stream X: <chan.> y - <chan.> y`

Example: `Stream 5: 8-9`

ADD

When channels were deleted (with the button **DEL**), you can add them again later with this button. You can change the properties of added channels via the controls to the right of the list box.

DEL

With the button **DEL** you can delete audio streams from the list box and thus bar them from usage in CLIPSTER. Simply select the respective stream and click on the button **DEL** to remove it. Deleted streams can be added again later via the button **ADD**.

Channels

This setting shows the number of channels that the audio clip provides. Up to 16 channels are possible per audio clip.

This setting will be determined by CLIPSTER automatically and cannot be altered.

Channel offset

The **Channel offset** setting allows to set a channel offset when adding or configuring audio streams. Select from the list box the respective stream that should provide the channel offset. Then either enter the offset manually in the entry field or use the controls to the right of this field to step the value up or down.

Mode

The audio mode of the selected stream in the list box can be configured with this setting. Select from the list box the respective stream that should provide another audio mode and select the desired mode from the combo box **Mode**.

By changing a stereo stream into a mono stream you divide one stream into two separate ones: The remnant channel of the stereo stream can be added as another mono stream via the **ADD** button.

Resolution With the combo box **Resolution** you can set the resolution of the selected audio stream (bit depth). Select from the list box the respective stream that should provide another resolution and select the desired one from the combo box.

Rate You can set the sampling rate of the selected audio stream via this combo box. Select from the list box the respective stream that should provide another sampling rate and select the desired one from the combo box.

Other Applications and Systems

Because the CLIPSTER software was designed for the high-end market when working with video, CLIPSTER can be seamlessly integrated into existing workflows if the use of other applications and systems is required. However, to work with particular third-party applications and systems properly CLIPSTER has sometimes to be configured in a certain way. These configurations will be detailed in this section. Furthermore, it will be explained how to use CLIPSTER via a network from another workstation.

5.1 CLIPSTER and Digital Fusion

The company eyeon integrated CLIPSTER in its workflow of Digital Fusion, i.e. Digital Fusion can access the DVS video board driver and transfer video material via the hardware of CLIPSTER. You can use Digital Fusion at every stage of your work easily and you only have to disconnect the driver of the DVS video board when using the CLIPSTER software at the same time as Digital Fusion. However, before using Digital Fusion together with the CLIPSTER hardware you have to perform an easy system preparation task first.

5.1.1 System Preparation to Use Digital Fusion with CLIPSTER

Before using Digital Fusion with the CLIPSTER hardware you have to perform a system preparation task first: One system file of CLIPSTER has to be copied to another location. For this perform the following:

- Open a standard file manager (e.g. the Windows Explorer) and access the program installation folder of the DVS software (installation path usually *C:\program files\DVS*).
- In the folder *Clipster* select the file *dvsoemx.dll* and copy it to the installation path of Digital Fusion (usually *C:\program files\digital fusion*).

After that you can begin to work with Digital Fusion and the CLIPSTER software.

5.1.2 Notes on Using Digital Fusion with CLIPSTER

This section provides some information what to observe when using Digital Fusion together with the CLIPSTER hardware:

– If you want to use Digital Fusion with CLIPSTER while the CLIPSTER software is running you have to disconnect the driver form the CLIPSTER software first. This can be done with the menu option ***Driver connect*** from the ***Options*** menu available on the menu bar of the CLIPSTER software. Further information about the menu bar can be found in the “CLIPSTER Edit Tool” user guide.

If the driver is not in use by another program, a simple play-out operation of the timeline in the CLIPSTER software will connect the driver to CLIPSTER again automatically.

– With the CLIPSTER software running in the background of the video workstation it is recommended to stop any display of clips with Digital Fusion for performance reasons.

5.2 Using CLIPSTER in a Network

You can use the CLIPSTER application in a network and connect to it, for example, from other workstations via a terminal. This section describes what to do to connect to CLIPSTER from another workstation, the commands that can be performed and how to close the network connection.

5.2.1 Connecting to CLIPSTER

You can connect to the CLIPSTER software from another workstation via a terminal. This section describes how to achieve a connection by using a Telnet program as a sample terminal:

For the following the CLIPSTER application has to be configured appropriately, i.e. it must be set to allow external connects. Further information about this and the other network configurations can be found in section “The Group TCP/IP” on page 2-24.

Furthermore, the workstation and the CLIPSTER video system have to be properly connected to a network and the CLIPSTER software has to be running.

- On the workstation that should be connected to CLIPSTER activate a command line (shell, or in case of Windows MS DOS prompt).
- Type in `telnet <name or IP address of CLIPSTER> <port of CLIPSTER>`,
  for example, `telnet localhost 42219`.
- After that press [Enter].

Then you will be connected to the CLIPSTER application on the CLIPSTER video system and you can control it easily with the commands listed in section “List of Commands” on page 5-3.

5.2.2 List of Commands

Once you are connected properly to the CLIPSTER application you can control it and thus the video system with the help of commands.

- Type in a command and confirm it with the key [Enter].

Then the command will be executed. The following table provides a list of the available commands:

Several commands of the table below perform the same operation as menu options on the menus of CLIPSTER’s menu bar. For further information about them or the other commands please refer to the “CLIPSTER Edit Tool” user guide.

Command	Explanation
BinCheck	Checks the consistency of the bin
BinClear	Removes all clips from the bin
BinExport	Opens the dialog window to export the bin to a file
BinImport	Opens the dialog window to import bin data from a file
CineReelUpdate	Checks for a connected DVS CineReel and loads the clips into the bin
CleanTmpDir	Cleans up the directory of the temporary operator data
ClearInOutpoint	Deletes the in- and outpoint of the time-line
ClearInpoint	Deletes the inpoint of the timeline
ClearOutpoint	Deletes the outpoint of the timeline
DisplayForward	Starts the play-out of the timeline (speed 1)
DisplayJogForward	Starts a jog operation forward (speed 0.1); if you enter the command during a shuttle operation again, the speed is in- or decreased by 0.1
DisplayJogPause	Pauses a jog operation
DisplayJogReverse	Starts a jog operation backward (speed 0.1); if you enter the command during a shuttle operation again, the speed is in- or decreased by 0.1
DisplayShuttleFor-ward	Starts a shuttle operation forward (speed 1); if you enter the command during a shuttle operation again, the speed is in- or decreased by 1
DisplayShuttle-Pause	Pauses a shuttle operation
DisplayShuttleRe-verse	Starts a shuttle operation backward (speed 1); if you enter the command during a shuttle operation again, the speed is in- or decreased by 1
DisplayStop	Stops the play-out
DisplayToggle	Switches between a play-out and stop
Exit	Cuts the network connection to CLIP-STER

Command	Explanation
`ExportConfig`	Opens the dialog window to export the currently set configuration via the Configuration Tool of CLIPSTER to a file
`Finalize`	Opens the **'Finalize'** window to finalize and render the currently active project
`GetInputRaster <timeline name>`	Returns the active input raster; the timeline name has to be stated as entered in the video format settings window to configure the output (see section "Timeline Name" on page 3-7)
`GetInputRasters <timeline name>`	Returns all possible input raster; the timeline name has to be stated as entered in the video format settings window to configure the output (see section "Timeline Name" on page 3-7)
`GetRaster <timeline name>`	Returns the active output raster; the timeline name has to be stated as entered in the video format settings window to configure the output (see section "Timeline Name" on page 3-7)
`GetRasters <timeline name>`	Returns all possible output raster; the timeline name has to be stated as entered in the video format settings window to configure the output (see section "Timeline Name" on page 3-7)
`GetTimelines`	Returns a list of all timeline names
`Goto <timecode>`	Moves the timeline cursor to the position entered in timecode format
`GotoEnd`	Moves the timeline cursor to the end of the timeline
`GotoInpoint`	Moves the timeline cursor to the set inpoint of the timeline
`GotoOutpoint`	Moves the timeline cursor to the set outpoint of the timeline
`GotoStart`	Moves the timeline cursor to the beginning of the timeline
`Help`	Displays help to the various network commands
`ImportConfig`	Opens the dialog window to import a once saved configuration of the CLIPSTER Configuration Tool from a file

Command	Explanation
`IsInputRaster-Available <time-line name> <raster>`	Checks whether the entered raster is available for an input; the timeline name has to be stated as entered in the video format settings window to configure the output (see section “Timeline Name” on page 3-7); as a raster you may enter its number or name as provided, for example, by `GetInputRasters`
`IsRasterAvailable <timeline name> <raster>`	Checks whether the entered raster is available for an output; the timeline name has to be stated as entered in the video format settings window to configure the output (see section “Timeline Name” on page 3-7); as a raster you may enter its number or name as provided, for example, by `GetRasters`
`JumpFrameBack`	Jumps five frames backward
`JumpFrameForward`	Jumps five frames forward
`OptionsConfig`	Starts the CLIPSTER Configuration Tool
`OptionsConnect`	Either connects or disconnects the driver
`PrerenderAll`	Prerenders the project
`ProjectLoad <project file>`	Loads the stated project file to CLIPSTER; if no project file is entered, the dialog window to open a project file will be displayed
`ProjectNew`	Creates a new project
`ProjectSave`	Saves the currently open project
`ProjectSaveAs`	Opens the dialog window to save the project under new file name
`Quit`	Exits the CLIPSTER application and, if appropriate, prompts to save the project; once CLIPSTER is closed, the network connection is severed automatically

Command	Explanation
`RasterInfo <raster>`	Provides further information about the entered raster; as a raster you may enter its number or name as provided, for example, by `GetInputRasters`; the output will be as follows: width (pixel), height (pixel), frame rate (Hz), frame type (i, p, sF), dominance (odd, even), aspect ratio (floating point), category (SD, HD, Vesa, Film)
`Redo`	Reverses the action performed via the command `Undo`
`Server`	Shows the name of the server (should always be `DVS Clipster`)
`SetInputRaster <raster>`	Sets the input raster; as a raster you may enter its number or name as provided, for example, by `GetInputRasters`
`SetInOutpoint`	Sets an in- and outpoint at the beginning and end of the clip in the timeline where of the timeline cursor is positioned
`SetInpoint`	Sets the timeline's inpoint at the current position of the timeline cursor
`SetOutpoint`	Sets the timeline's outpoint at the current position of the timeline cursor
`SetRaster <raster>`	Sets the output raster; as a raster you may enter its number or name as provided, for example, by `GetRasters`
`StepCuttingNext`	Jumps to the next cutting point
`StepCuttingPrevious`	Jumps to the previous cutting point
`StepFrameBack`	Steps one frame backward
`StepFrameForward`	Steps one frame forward
`Undo`	Reverses the latest timeline related action
`Version`	Shows the version number of the CLIPSTER software

5.2.3 Exiting a Network Connection

To stop and cut your network command session perform the following:

- Type in `Exit` and press the [Enter] key on your keyboard.

The connection to the CLIPSTER application is severed. However, with this command the CLIPSTER application is left in its last state, i.e. it is not closed itself. For this you have to end all operations beforehand and enter the command `Quit`. It will close the CLIPSTER software which will in turn also sever the network connection.

Configuration Explanations

Some of the configuration settings that can be performed with the CLIPSTER software may need further explanations. This chapter provides further details about some of the configuration settings of CLIPSTER as well as additional backup information.

In the following you can find explanations, for example, about directory paths, pulldown, color space conversions and the VTR settings.

6.1 Notes on Directory Paths

The CLIPSTER software is able to use relative directory paths as well as absolute ones for some configuration settings as well as for the material added to the bin and the timeline.

A relative path in CLIPSTER will always be referring to the **System base video directory** (see section “The Group General” on page 2-14). If you enter, for example, in the clip properties of a clip (see chapter “Bin Clip Properties” on page 4-1) as its path *Movie\Clipster*, it will be seen in relation to the system base video directory, i.e. it will be *<System base video directory>\Movie\Clipster*. An absolute path contains the complete path to the clip or directory, i.e. the drive letter together with all directories.

relative	Notation:	`directory\subdirectory`
	Example:	*Movie\Clipster*
absolute	Notation:	`drive_letter:\directory\subdirectory`
	Example:	*V:\Video\Movie\Clipster*

Instead of the backslash (`\`) you may also use a slash (`/`).

Usually, if you add a clip from within the **System base video directory** to CLIPSTER, it will be provided with a relative directory path automatically. If a clip is added that comes from another location, its path will be absolute. You can also change the paths of clips in the bin via their properties manually as described in chapter “Bin Clip Properties” on page 4-1.

The usage of absolute or relative paths is available in most parts of the CLIPSTER software where a path has to be entered, for example, while configuring settings with the CLIPSTER Configuration Tool or recording clips with the CLIPSTER I/O Tool.

6.2 Pulldown

You may need pulldown when working with film-originated material. The pulldown feature of CLIPSTER offers a film-to-video conversion: It processes film data that is in 24 progressive frames/sec. (film) as 30 interlaced frames/sec. (video). This is achieved by splitting the film frames alternately into two and three video fields.

The pulldown feature of CLIPSTER may be accessible when you intend to in- or output video material, for example, during your settings of the video format in the video format window (see chapter “Video Format Settings” on page 3-1). Usually, the pulldown feature will be available when you select an interlaced raster with a frame rate of 30 or 29.97 Hz. Then, if appropriate, select the necessary pulldown method from the **Pulldown** and **Startphase** combo boxes.

To use this feature during a play-out of the timeline of the CLIPSTER software, the video track should contain 24p material only.

With the field **Pulldown** you can select whether pulldown shall start with three (`3:2 Pulldown`) or two (`2:3 Pulldown`) video fields for the first film frame.

The combo box **Startphase** sets the pulldown start phase, which is important if you want to properly insert transferred material behind or in front of existing sequences (e.g. on a VTR). The pulldown start phase takes the following original pulldown sequences as reference point:

Film Frames:	`1 2 3 4`
3:2 Pulldown Fields:	`11 12 23 33 44`
2:3 Pulldown Fields:	`11 22 23 34 44`

The pulldown start phase specifies, at which point in these sequences the processing shall start. The different settings effect the following pulldown sequences:

Pulldown Setting	Start Phase Setting	Result
3:2 Pulldown	A	`11 12 23 33 44`
	B	`2 23 33 44 11 1`[1]
	C	`3 33 44 11 12 2`[1]
	D	`44 11 12 23 33`

Pulldown Setting	Start Phase Setting	Result
2:3 Pulldown	A	11 22 23 34 44
	B	22 23 34 44 11
	C	3 34 44 11 22 2[1]
	D	4 44 11 22 23 3[1]

1) *This start phase in conjunction with the selected pulldown method will not work because CLIPSTER is not able to start or end on second video fields.*

6.3 Color Space Conversions and Scalings

In professional video production and postproduction, for the transfer, storage and handling of video data normally two kinds of formats are used: RGB and YUV (YUV is also known as YC_bC_r). The format that is used mostly for play-out or record of video data is YUV, whereas RGB is mainly used if you need the video data in the highest quality, for example, if you want to process the video data with editing and effects computer software.

There are several differences between the RGB and the YUV format and some of them will be discussed in this section.

6.3.1 RGB

The RGB signal is a component signal. Each video pixel is described by values of R (red), G (green), B (blue). All three values together describe the luminance and the color of a pixel.

With RGB there are two different color space ranges possible:

- a restricted value range and
- a full value range.

In RGB 8 bit with a color space range of the restricted value range you will have values ranging from 16 to 235 meaning the value 16 indicates a total black while 235 indicates a full white. The remaining values (1 - 15 and 236 - 254, 0 and 255 are reserved for special usage) may provide headroom for a possible signal overshooting that may occur during the sampling of analog video signals. This color range is mostly used in the processing of video data, i.e. in play-out or record operations.

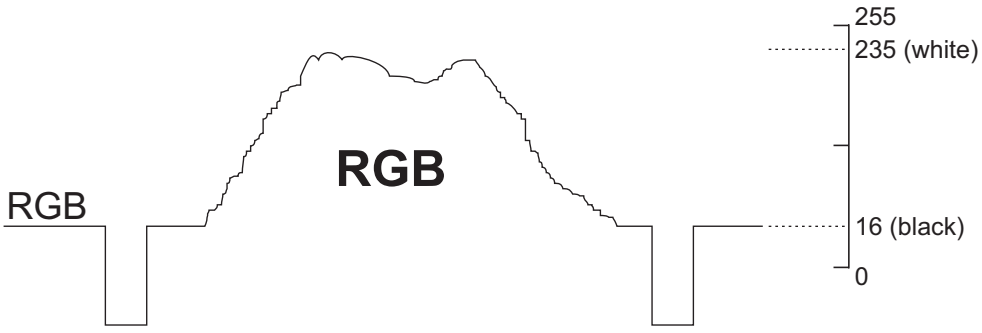


Figure 6-1: RGB signal with limited color range

For RGB in 8 bit in the full range color space you will have values ranging from 0 to 255. A format with this color range is mainly used on the computer side for editing or effects applications.

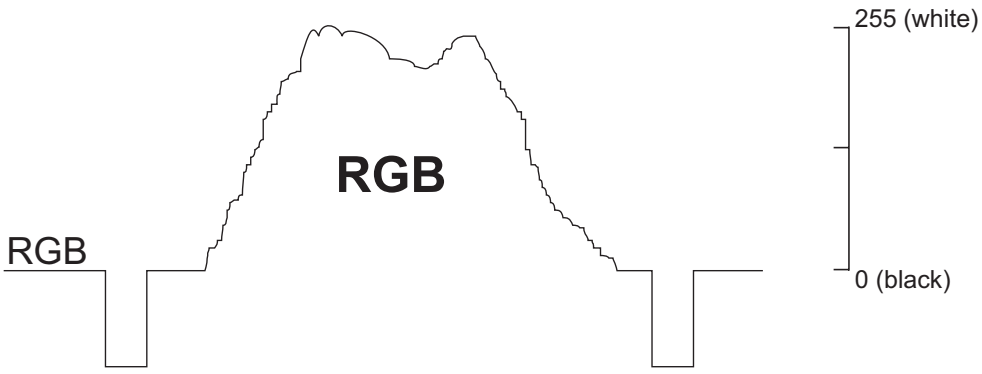


Figure 6-2: RGB signal with full color range

6.3.2 YUV

In the early beginnings of color television it was important to define a format which supported black-and-white television sets as well as color capable systems. The solution was the YUV format which is still the standard in transmitting and receiving television signals.

The YUV signal is also a component signal: Y is a luminance signal (the only signal used by black-and-white televisions), while U and V (also named C_b and C_r) contain the color information.

As U and V are obtained by subtracting the luma signal Y from B (U) or R (V), U and V may become positive or negative. When storing U or V in one byte, usually an offset of 128 is added to get rid of the negative value (then zero is indicated by 128). Y, U and V normally have a restricted range. While Y has the same range as the restricted RGB 16 to 235, U and V range from 16 to 240. A full range of 0 to 255 is less common with YUV signals.

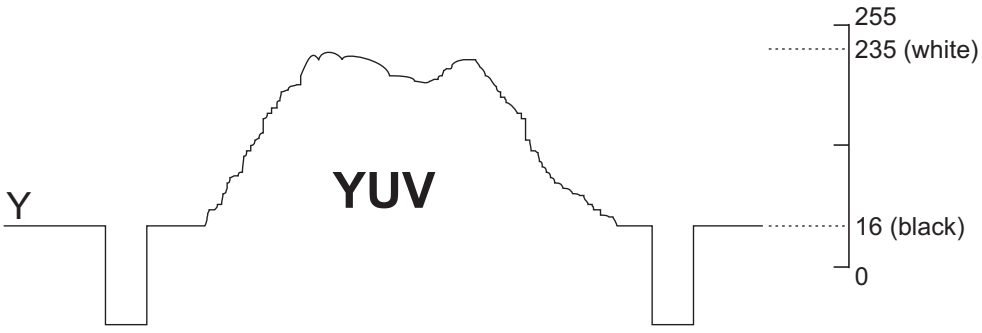


Figure 6-3: Color range of the Y component of the YUV signal

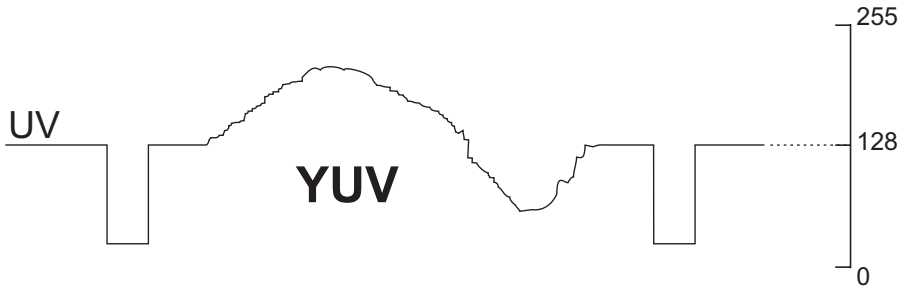


Figure 6-4: Color range of the U and V component of the YUV signal

For processing, i.e. for play-out and record, you will most likely choose the YUV format. Usually, it is not used when you want to work with edit applications.

6.3.3 Color Space Conversions

It is possible to make conversions between the two different color spaces. For example, you can calculate the Y, U and V components from a given RGB signal via the following formulas:

$$Y = 0.2126 \cdot R + 0.7152 \cdot G + 0.0722 \cdot B$$

$$U = B - Y$$

$$V = R - Y$$

The figures in the formulas above were taken from one of the applying standards. However, there are several standards available, most of them using similar but nonetheless different values. Please regard the figures above as examples only.

The conversion is reversible. So from any given YUV triple the corresponding RGB values can be obtained.

DVS performs all color space conversions according to the applying standards and regulations and all conversions are performed automatically according to the set color conversion matrix.

Color conversion matrices are used when a conversion between different color spaces or scalings between different value ranges is necessary. Usually, with SD data the matrix (colorimetry) of the standard ITU-R BT.601 applies (setting `CCIR 601`) while with HD data the matrix of the standard SMPTE 274M (setting `SMPTE 274`) is used.

6.3.4 Color Space Scalings

During the processing of video data, color space scalings may take place according to the matrix you have selected.

Regarding the color conversion matrix see setting **Matrix** in section “The Video Format Details” on page 3-9.

During Output (Play-out)

During output, if your material in the timeline is YUV with a color space of the restricted value range and you select for an output the full value range of the color space, your material will automatically be scaled accordingly. In fact, the CLIPSTER software evaluates each clip present in the timeline separately whether it provides a full or a restricted value range. The appropriate scalings, if necessary, are then applied automatically.

Regarding the color space scalings during output the following possibilities exist:

In the table below the expression ’with headroom’ or `Head` respectively indicates a signal in the restricted value range that provides a headroom for a possible signal overshooting.

Color Space of Material in Timeline	Output Setting	Color Space of Output Signal
with headroom	`Head`	with headroom
in full	`Head`	with headroom
with headroom	`Full`	in full
in full	`Full`	in full

Please note that the respective output setting has to be set with the appropriate range setting. If the **SDI Mode** is set to an RGB color space, you have to use the **RGB range** setting. If it is set to YUV, use the **YUV range** setting (see section “The Video Format Details” on page 3-9).

During Input (Record)

During the input or record of video material the color space scalings are applied automatically by the CLIPSTER software with regard to the selected file format. If the signal present at the input of CLIPSTER is YUV with a color space of the restricted value range and a RGB file format is selected for the storage, the restricted value range will be scaled up to the full value range. If a YUV file format is selected, its color space will be preserved.

Regarding the color space scalings during input the following possibilities exist:

The YUV file formats usually carry a corresponding designation, for instance, `dpx-yuv` for the *`*.dpx`* file format.

In the table below the expression 'with headroom' or `Head` respectively indicates a signal in the restricted value range that provides a headroom for a possible signal overshooting.

Color Space of Input Signal	Selected File Format	Color Space of Stored File
with headroom	YUV	with headroom
in full	YUV	with headroom
with headroom	RGB	in full
in full	RGB	in full

6.4 VTR Settings

Via RS-422 CLIPSTER is able to control a connected video tape recorder (VTR) by remote. Then you can use it either as a play-out source while recording with CLIPSTER, or as a recorder while playing out with CLIPSTER.

Further information about how to control a device via RS-422 can be found in the “CLIPSTER I/O Tool” user guide.

The following describes the procedure and actions performed by CLIPSTER and the VTR as they would occur during a record operation with a connected VTR as a recorder. However, they will be similar when the VTR is used as a play-out source.

Before recording data with a VTR while CLIPSTER is playing out, it is necessary to define some general parameters, such as the edit lag and the preroll time of the VTR in the CLIPSTER software. These parameters are necessary because the VTR is a mechanical device that requires some time to perform its operations frame accurately. These have to be taken into account by CLIPSTER when controlling the VTR and the necessary parameters can be defined in the ***VTR*** group of the CLIPSTER Configuration Tool (see section “The Group VTR” on page 2-32). Because the parameters are characteristics of the connected VTR the necessary values can be found in its technical details.

The whole process of, for example, starting a record operation of the connected VTR via CLIPSTER can be divided into several commands sent by CLIPSTER: To start a record operation on a VTR CLIPSTER begins its command sequence with a play command.

The VTR needs some time to get ready for a frame-accurate operation, meaning the VTR needs some time to accelerate the tape to its proper velocity. This is called the preroll time. To perform a frame accurate record the VTR has to go to a point on the tape before the record operation should start (the record inpoint minus the preroll time). The respective timecode is the point on the tape where the VTR has to start the whole recording process.

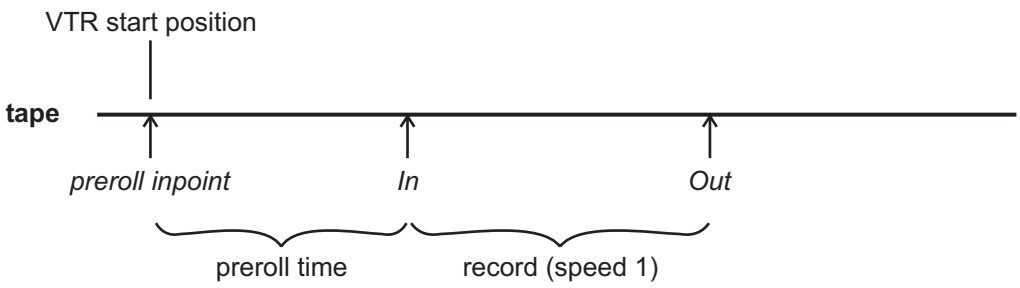


Figure 6-5: Preroll position of VTR tape

After receiving the play command, the VTR starts its play operation from the preroll inpoint and brings the tape to its proper velocity.

For the following there is also something else to consider: From the time a command is sent to the VTR up to the point when the VTR receives and executes the command also some time elapses. This is called the 'edit lag'. Compared to the preroll time it is much shorter. Therefore, at some time after the VTR reaches its proper velocity, the record command is sent by CLIPSTER. Then, at the proper time the VTR initiates the record at the correct position on the tape.

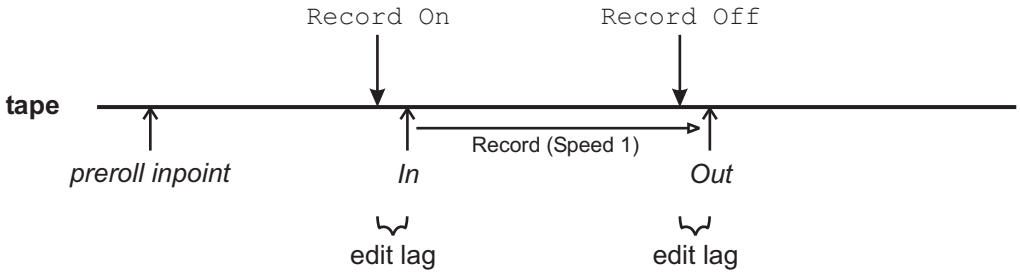


Figure 6-6: Edit lag of VTR

At the timecode minus the edit lag when to stop the record operation, CLIPSTER sends the command to end the recording. Then, at the proper time the VTR receives the command to stop the recording, i.e. the VTR switches back to play mode and after another second (postroll time) CLIPSTER sends the command to stop the VTR mechanically.

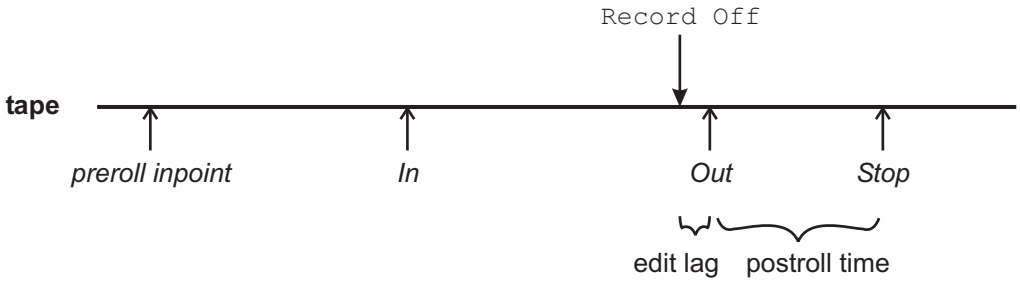
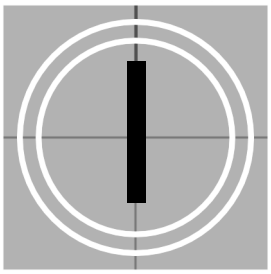


Figure 6-7: Postroll time and stopping of VTR

The parameters for preroll time and edit lag can be set with the Configuration Tool of CLIPSTER (see section "The Group VTR" on page 2-32). The postroll time parameter is by default set to one second and cannot be adjusted.



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